



FRIDAY, APRIL 9, 1880.

The Rider Compression Pumping Engine.

There are many small water stations on railroads where the supply is elevated by manual or animal labor. It is an expensive, and, at times, inefficient manner of doing this, but the cost would be greater if steam power were substituted, because then the services of a more or less skillful me-

cylinder," but its object is not only to compress, but also to condense the heated air. In it moves a piston, *C*, which is coupled to the same shaft, *II*, by means of a connecting-rod and a crank, as shown. The lower portion of the piston *C* is a trifle smaller in its diameter than the cylinder, to allow the air to pass between.

The expansion and the compression cylinders communicate with each other by means of a channel, *H*, in which are fixed three series of thin parallel metallic plates (as shown in part section), between which the air passes when moving from one cylinder to the other. The lower portion of the compression cylinder is surrounded by a cooler, *E*, through which circulates water that is being pumped. An air check-valve controls automatically the admission of the air from

tons is *maximum*, while in the reciprocally reversed position it is the *minimum*. The crank of the expansion piston is in advance of the other.

The operation can now be readily understood. On starting the engine the shaft is turned once. As soon as the pistons reach the maximum of their combined displacement the air is sucked through the check valve until the cylinders are full, and then the valve closes, for the pressure from inside immediately becomes greater. The valve then remains closed all the time during the operation. When the pistons are in the position of the minimum of displacement the air is compressed to one third of its volume. Let us now consider the whole revolution of the shaft beginning from the position shown in fig. 1.

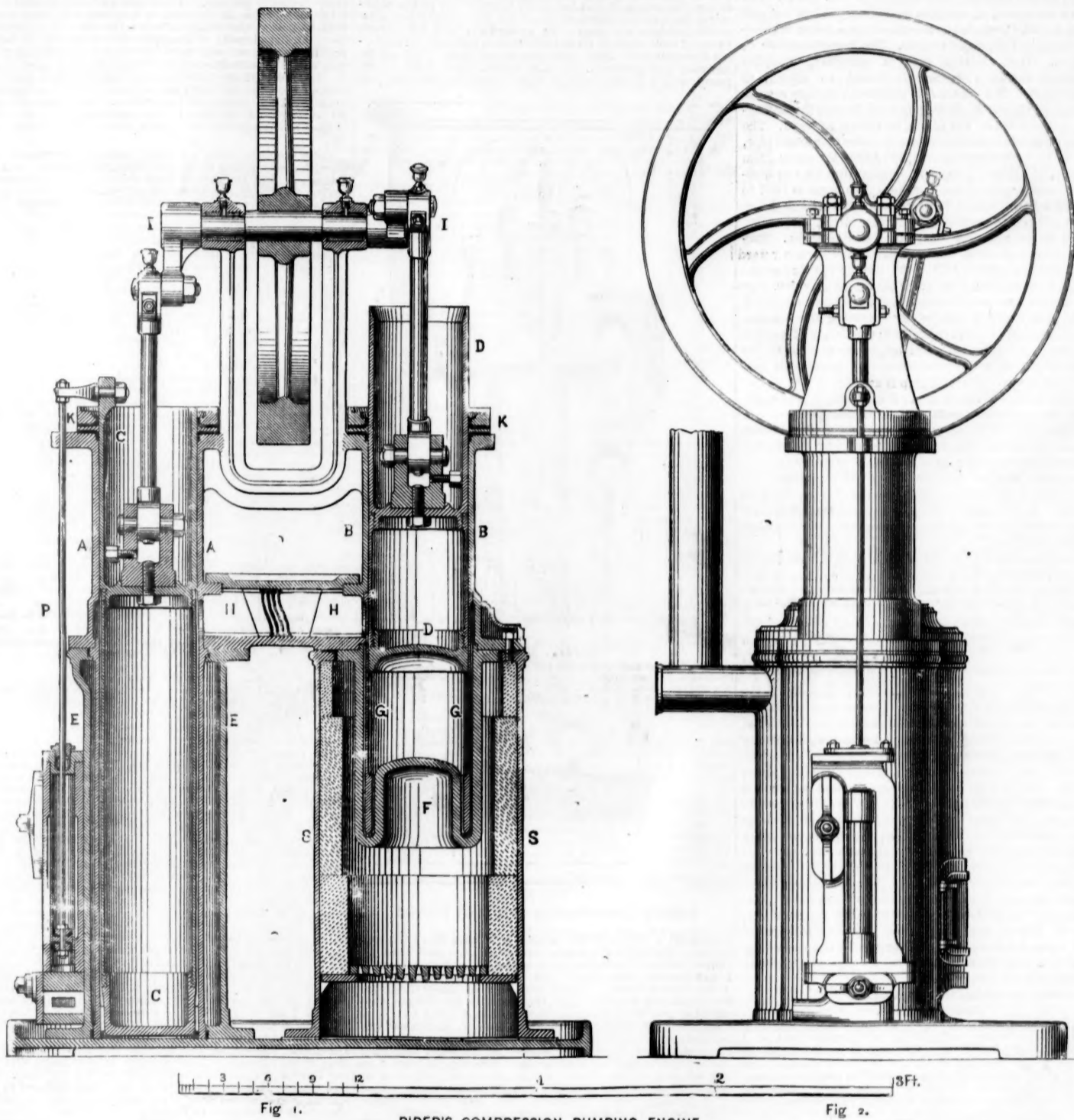


Fig. 1.

RIDER'S COMPRESSION PUMPING ENGINE.

Fig. 2.

chanic would be indispensable. A cheap and simple motor which does not require much attention, and can be operated by an unskilled man, is, for these reasons, of great value to railroads. Such a motor is illustrated in the accompanying engravings. The compressed, heated air furnishes the motive power. Before its operation is explained, it will be observed that—as shown in figs. 1 and 2, representing, respectively, a vertical section and a side view—it consists of a cylinder, *B*, which we shall call the "expansion cylinder," the bottom of which is peculiarly shaped (resembling the bottom of a wine bottle), as shown at *F*. The lower portion of the cylinder is inserted into a vertical stove, in which an ordinary grate fire can easily be kept burning. A cylinder-shaped piston, *D*, can move in the expansion cylinder, and its motion is transmitted to a shaft, *II*, by means of a connecting-rod and crank, as shown.

In the lower portion of the expansion cylinder is attached a thin telescoping cylinder, *G*, which leaves a space of about one-fourth of an inch between the two. Its object will be explained hereafter. On the other side of fig. 1 is shown another cylinder, *A*, which has been called the "compression

the outside to the air-space of the compression cylinder. This could not be represented in the engraving, being covered by other parts of the apparatus. There is also an air-cock attached to the bottom of the compression cylinder, which, when opened, will stop the motion of the apparatus, as will be explained presently.

With the piston *C* moves also the plunger *P* of the pump which is shown attached to the cooler, and the simple construction of which will be separately illustrated. *K K* are the packings which are in duplicate for each cylinder. The lower one has its lap downward to resist the escape of air below the piston, while the upper one has its lap upward to prevent the lubricating material from entering too freely into the cylinders. Between them is the relief ring, which is so constructed as to relieve the friction of the packings almost entirely. The shaft carries a fly wheel.

To explain the operation, it must be remarked that the two cranks form an angle of little over 95°, and are equal in length. It will then be observed that in the position in which both the cranks are above the shaft, and at equal angles from the vertical line, the air-space under the two pis-

The compression piston is in its lowest position; the air is thus all driven through the channel *H* to the expansion cylinder. The piston of the latter is in its upward stroke. The compressed air, heated by the fire, expands and forces the expansion piston to the top, and the compression piston being at the same time on its upward stroke, the displacement becomes greater. When the expansion piston has reached the highest point, it begins to descend; but the combined displacement still increases until the maximum is reached, when the compression begins. The fly-wheel then performs its function, and, as during the greatest portion of the compression period the two pistons are descending, their weight also overcomes the resistance of compression. The expansion piston being the first to descend, it drives the heated air through the channel *H*, where a great portion of the heat is taken up by the metallic plates. As soon as the expansion piston is at its lowest point, all the air is driven to the compression cylinder, where, having to pass through the thin space between the piston and the cylinder, it is rapidly cooled, and it resists but slightly the downward motion of the piston. But as

soon as the expansion piston begins to ascend, the air returns to the expansion cylinder, absorbing back the heat from the metallic plates, and having to pass through the thin space between the telescoping cylinder and the heater, the expansion begins rapidly again. The arrangement of these metallic plates is a considerable source of economy, and this portion of the apparatus is called the "regenerator." To stop the engine, it is sufficient to open the air-cock and to allow the compressed air to escape.

The simplicity of the engine commends itself. There are no valves. The fire is light, and as easy to manage as that of an ordinary stove. The bearings are provided with self-oiling cups, and need attention but seldom.

In fig. 3 is given the sectional view of the pump.

It will be seen that the pump is made in two pieces. The upper or main part, A, contains the delivery valves *c* and *d*, and also the barrel, C, which is a seamless drawn brass tube securely fitted and expanded therein. The lower chamber B, to which the suction pipe is attached, contains the suction valves *a* and *b*, and is bolted, as shown, to the main part. The bucket D is provided with two reverse cup leathers; the rod E, passing upward through the stuffing-box F, is connected to the piston, as shown in fig. 1. The priming cock G is connected with the cooler by a small pipe, and is for the purpose of priming the pump by water from the cooler, and allowing any air to escape that may be trapped in the upper part of the passages. The pump is held to the cooler by two bolts, *e* and *f*, which are long enough to go through and secure the bonnets over the valves.

It will be observed that the pump is double-acting. During the upward stroke of the bucket, *b* is the suction valve, while *d* is the discharge valve; and during the downward stroke, *a* is the suction valve and *c* the discharge valve.

The valves are simply cylindrical pieces of rubber, very durable, and easily accessible by removing the bonnets. This construction of valve obviates the necessity of bridges or grating in the valve seat, and allows the port to be one free opening, with nothing to obstruct or impede the passage of the water.

For deep wells a different pump is used, which is also considered to be an improvement on other similar pumps.

Two sizes of these pumping engines are used. The six-inch engine, it is claimed, will readily deliver from 600 to 800 gallons of water per hour to a height of 60 to 70 ft., or a proportionate quantity at a greater or less elevation; and will consume, when running ten consecutive hours, from 30 to 40 lbs. of coal only. The ten-inch engine will furnish four times the quantity, with a consumption of about double the amount of fuel.

This engine, which is now used to considerable extent in hotels and private houses, is also in use on upward of seventy railroads, here and abroad.

More particulars can be obtained from Cammeyer & Sayer, 93 Liberty street, New York, and No. 167 Washington street, Chicago, where engines can be seen in operation.

Boards of Trade on Transportation Questions.

Opinions of the members of such commercial bodies as the New York Produce Exchange, the Chicago Board of Trade and the St. Louis and Cincinnati Chambers of Commerce, who have to deal directly with transportation, would, if they could be reached accurately, doubtless represent very well the views of the community with regard to transportation questions. It is not by any means certain that the reports of these bodies represent the prevailing views of their members, but as the officers who prepare these reports come in contact constantly with the members, the reports are likely to represent opinions which have some adherents.

Below we copy from the report of 1879 of Mr. Charles Randolph, Secretary of the Chicago Board of Trade (whose members probably ship more than those of any other commercial body in the country), and from the report of Mr. Henry C. Wilson, Secretary of the Indianapolis Board of Trade, whose members have, comparatively, but a small aggregate shipping business, but who are dependent wholly upon railroads for transportation.

The Chicago report has the following:

TRANSPORTATION.

This subject ranks among the most important as affecting the prosperity of every industry in our country, and is of especial interest to those engaged either as agriculturists or as dealers in the products of the soil at points remote from those at which such products are needed for actual consumption. The subject has become a prolific theme for discussion, and has brought to public attention numberless propositions intended by their authors for the benefit of producers and consumers, by reducing the cost of moving the necessities of life from one of these classes to the other. In past generations, when the common carrier was accustomed to ply his vocation on the highways and waterways of the country, which were open alike to all, and whereon even a novice could, by a moderate outlay for equipment, engage the more experienced in a competition that would act as an effective check on any disposition to conduct the business on any other basis than one of fairness and equity, there was small opportunity for the imposition of extortionate charges for services performed or for unjust discriminations as between individuals or communities. The advent of the era of railroads, owned and operated by corporations brought into existence by legislation of the several states, and originally designed to be operated only within the state which had created them, has wrought a revolution in the system of transportation which is constantly presenting new developments and bringing into notice new questions touching the relations of the people to these corporations, for the true and just solution of which the best thought and the wisest measures attainable should be brought into requisition. A railroad corporation, at least in so far as the major portion of its line is concerned, is essentially a monopoly, holding the power, in many instances, assumed to be conferred on it by special legislation, of building up or destroying the value of the property of individuals or communities at will. It is probably quite true that instances are not frequent, if they have ever occurred, where such corporations have wantonly designed to

injure the property or business of any particular individual or locality, but it cannot be denied that the policy frequently pursued has had that effect. Cases have recently been developed, in a general investigation into the management of the railroads of New York—and they doubtless exist elsewhere—in which discriminations in favor or against certain localities, and in some instances in favor of individuals, have resulted in the destruction of established and legitimate business, and the impoverishment of men and communities. Certainly, no such power was ever intended to be conferred on any corporation created for the benefit of the whole people and by their own representatives. The unparalleled development of the resources of the country, resulting from the construction and operation of railroads, naturally inclines a reasonable public to admit that the influence of these corporations for good has been of so preponderating a character that incidental evils should be treated with great leniency by a people who have shared their benefits in much greater measure than the proprietors of the lines themselves. It may be assumed that the great interest the people themselves have in the maintenance of the lines upon which they are dependent for their own prosperity, will not permit them, if their right to do so be conceded, to make unreasonable demands upon these corporations, or seek to impair the value of their property. It is, however, their right to demand, and doubtless within their power to enforce, just

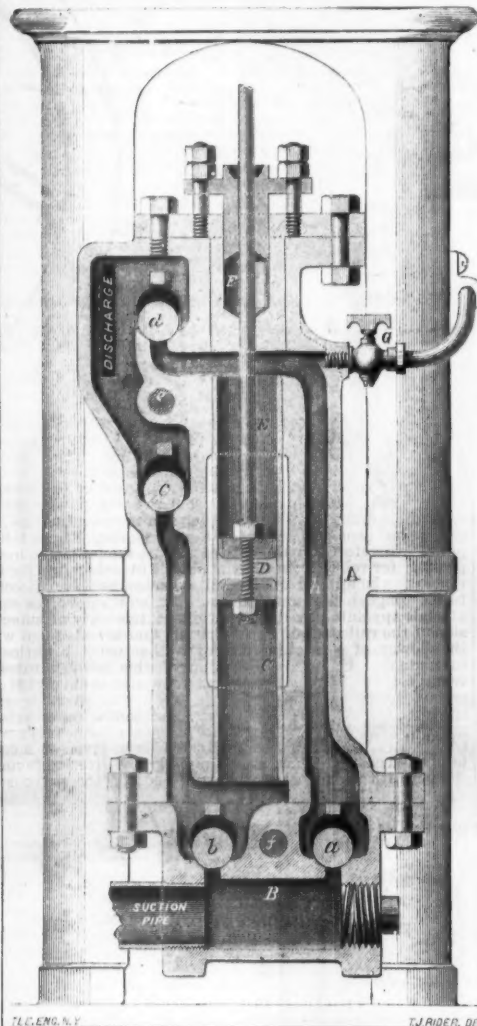


Fig. 3.

RIDER'S COMPRESSION PUMPING ENGINE.

treatment in return for the valuable privileges they have conferred. The railroad question has, within the past year, assumed such new features that it is to-day, perhaps, the most important one presented for the consideration of the people of the United States. It has been held by many that time would remedy any real evils that exist in the system, that with the growth and development of the country new lines would be constructed, that would, by the laws of competition, regulate and control all matters involved in the question upon principles of equity and justice, or, at least, that such competition would be the paramount influence to control, in the interest of the people, the management and rates at points affected by it. The past few years, however, instead of developing new competitive forces, have been pregnant with schemes of consolidation, and to a very alarming extent the feeble competition, which from time to time has at various points shown some vitality, has succumbed to absorption and entirely ceased to exist. A comparatively few individuals are steadily gaining control of the valuable interstate lines, through which they can dictate the policy of, or effectually destroy, those of less importance. By far the most formidable scheme for destroying competition that has ever been devised in this country, or the world, has been developed during the past year. By it, all the great trunk lines between the East and West are practically consolidated, in so far as their relations to the people are concerned, into a giant monopoly, from which the element of competition seems to be entirely eliminated. At intervals, for years, these lines, as the result of real or supposed infractions of agreements among themselves as to the conduct of business, had been accustomed to seek redress by a warfare as bitter and intense as that in which nations, for similar reasons, have been wont to engage their armies. The implements originally adopted for the conduct of these battles were abatements in rates, more or less common to all, but not infrequently accorded to large shippers in greater measure than to the general public; this constituted a most odious discrimination, that in its results tended strongly to build up and strengthen the already strong at the expense of the weak. These special rates to large shippers were liable to be so made as to cover property not their own, and on which they could realize a profit of at least a portion of the difference between the special rate and that charged the general public. In respect to this method of conducting business, a

prominent officer of one of the trunk lines is reported to have said, before the New York committee of investigation, that his "company never inquired whether the grain carried on such contracts belonged to the parties making the contracts, and had no means of knowing whether the parties farmed out part of their contracts to other people." He did not think "it made any difference to the railroad whether the grain for a contract with one man for a thousand car-loads came from one person or fifty." The latter part of this statement may be true as regards the railroad, but it will hardly be doubted that it does make a material difference to the forty-nine whether or not they are placed on an equality with the favored one. The damages inflicted by these conflicts were expected to starve the enemy into a condition that would compel an adjustment of the disagreements. During their progress competition held unrestrained control; a competition, however, that had in it no healthful ingredients, and which in its ultimate results was injurious in almost equal measure to the railroads and to the majority of their ordinary patrons. These railroad wars tended to unsettle all business calculations, as they suddenly, and usually without notice, materially affected the value of all property in which the element of transportation cost was an important factor. Those who were benefited by a temporary cut rate were far outnumbered by those who were made to suffer the results of the warfare, as the adoption of a truce was usually accompanied with an advance in rates sufficient to make good the wastage of the conflict. This bore with special severity on those who, in the succeeding months, being obliged to patronize the lines, were made to contribute to this end.

These conflicts were of such frequent recurrence, and were so demoralizing to all the interests involved, that the management of the several lines evidently came to appreciate the absolute necessity for the adoption of some measure that should effectually put an end to them. Various plans were suggested; some of which failed with brief attempts at enforcement, until finally the present organization was effected, which became fully established as to both west and east-bound traffic in June last. In December the organization embraced thirty-four railroad lines, substantially covering the whole of the east-and-west traffic of the United States north of the Ohio River, and through Canada. Of its general objects, the following, from a late address of its chief officer to the representatives of the lines interested, may be considered a fair outline: "You have now for the first time established a practical method by which the competitive traffic of your roads can be properly managed and controlled. Heretofore this was impossible, the mere holding of conventions of railroad managers, passing resolutions, and then dispersing and letting things take care of themselves, each party acting as it sees fit, will not accomplish the purpose of intelligent joint management of the large property under your charge. You have now added to the legislative department—your conventions—also a permanent executive department, the duty of which is to see that the resolutions passed and agreements made are faithfully carried out. In addition to this you have established a judiciary department, consisting of a Board of Arbitration, whose duty it is to settle peaceably any question of difference without resort to wasteful warfare, with all its injurious consequences. * * * The companies composing this association have already, by their voluntary action, abolished the pernicious system of special contracts, and all shippers are now put upon an equal footing. Rates for the last few months have been everywhere (in the territory in which these roads are located) maintained, and the great disparity between the local rates and the competitive through rates, which has heretofore been so great a source of trouble and complaint, has ceased to exist."

That the past experience of the railroad management has demonstrated the necessity of some such method of cooperation as is indicated in the above extract will not be questioned, and from a stand-point embracing only the view of the railroad interests, those interests may be congratulated that a scheme so promising in its results has been inaugurated, with every indication of permanence and of utility to them. The public will also have reason to rejoice if it shall prove that the uncertainties attending business operations, as the effect of railroad wars, are at an end, and provided this gigantic combination shall not develop into a means of oppression and extortion. That it has the power to exercise a practically despotic tyranny over the people in respect to the charges demanded for transportation services cannot be denied. That it will refrain from unjust and unreasonable exactions depends to a great extent on the sense of justice displayed by its management. For a portion of the year the navigable water-ways will undoubtedly hold in check any disposition that might otherwise prevail for the undue advance of rates, but for nearly half the year these can exercise little but a prospective influence, and for the vast volume of property that must be moved in the winter months rates can be maintained at a point wholly unjustified by the cost of the service. It must be confessed that the large advance in rates to the sea-board enforced in the last months of the year does not give encouragement to the hope that rates are to be regulated on the basis of what the service is really worth, but rather upon one which assumes the right to demand all it can get. It certainly will not be claimed that if 15 and 20 cents per hundred pounds on grain from Chicago to New York, which were the rates established by the combination in June and July, were then remunerative, 40 cents for the same service is a necessary charge in November and December. Assuming the average distance by the several lines from Chicago to New York to be 960 miles, 40 cents per 100 lbs. is equivalent to 8½ mills per ton per mile. The last annual reports of several of the lines engaged in this service give the cost per ton per mile of moving freight on their lines as follows: Pittsburgh, Fort Wayne & Chicago, 4½ mills; Lake Shore & Michigan Southern, 4½ mills; Pennsylvania Central, 4½ mills; New York Central, 5½ mills. These figures cover the cost of moving all freight, local and through, as well as the various classes, grain being below fourth class. All railroad experts admit that the cost of moving freight for long distances is much less per ton per mile than for shorter distances. Applying these principles to the ruling railway rates at the close of 1879, they appear to be wholly without justification, and well calculated to impair confidence that the new order of things can be relied on to promote justice and fair dealing between the railroads and their patrons. While it is admitted that the present arrangement seems admirably calculated to benefit the roads themselves, there seems to be an absolute necessity for the intervention of some power to protect the people. This, so far as it shall relate to the traffic passing beyond the bounds of a single state, can only emanate from the national government, which undoubtedly possesses some degree of authority in the matter. To what extent this may be lawfully exercised remains yet to be determined by the decision of the proper tribunal.

A bill is now pending in Congress, designed by its author to correct some of the abuses which have grown up in the conduct of interstate transportation by rail, and in some measure control the railroad management of lines engaged in that service. The subject is of such vast importance, and its ramifications and bearings are so intricate, that great caution should be exercised in inaugurating legislation respecting it, especially such as contemplates a supervision of

details by the iron-bound provisions of statute law. In many of its features this bill seems to have been well considered, and some of them are essential to any attempt at governmental control. It, however, seems to ignore the just advantages possessed by localities favored by nature with competitive forces, which, in an unrestricted and untrammelled condition of railway competition, have always exercised a controlling influence over it. All that the people have demanded in respect to railway charges, and all they are entitled to demand, is that their business shall be done at a charge that under the circumstances is equitable and fairly remunerative to the railway company. They have just cause for complaint if they are taxed to make good losses sustained by a railroad company in doing business for others at less than cost; but it is no good ground for dissatisfaction that a railroad, in order to secure business from points more remote from a common destination, will accept even less for the greater service than is charged for the less, provided, always, that the higher rates are on an equitable basis and the other business is not done at its expense. Upon this principle, the fourth section of the bill referred to seems objectionable, in that it provides "that it shall be unlawful for any person or persons engaged in the transportation of property, as provided in the first section of this act, to charge or receive any greater compensation per car load of similar property for carrying, receiving, storing, forwarding, or handling the same for a shorter than for a longer distance in one continuous carriage." It will be observed that no consideration is to be given to volume of business, return traffic, nor the influence of competition by other routes or other systems of transportation. Under the operations of such a law it is a question whether cities having the advantages of a cheap water transportation, like Chicago and many others, would realize much advantage from railroads in a competition to a common point, because the railroad lines, rather than reduce their local rates to or below the rates they could command for the competitive business in conformity to the law, would perhaps prefer to abandon the latter, even though it might be slightly remunerative. It is more than doubtful if any good result can be accomplished by a statute regulation of this character, and it is to be hoped that the initial measures in a system of governmental supervision of this important question may not be encumbered with provisions of a character in any degree inharmonious with the principles upon which the fair conduct of such a business should rest. Other provisions of the bill are of questionable expediency, especially that relating to the so-called pooling of competitive business. The country at large has no doubt suffered much more injury from the effects of reckless and spasmodic contests for competitive business than from any agreed division of such business at equitable rates. That provision of the bill which restricts its operations to carloads of property is exceedingly obnoxious, as it practically invites evasions of its spirit, and would inevitably destroy the good it might accomplish if of general application.

If Congress will simply establish a commission, say of five competent men, who shall be recognized by the country as men of unimpeachable character, and of eminent qualifications for the delicate and responsible duties of their position, and clothe such a commission with ample authority to supervise and control, by their approval or disapproval, all questions relating to this subject that involve the rates to be charged for transportation, the classification of the traffic, and the general manner in which the business shall be conducted, conferring upon it the fullest authority to enforce its decisions, subject only to appeal to the United States courts, pending which those decisions shall be observed; giving it full power to require the production of books and papers, and to examine them and any individual when deemed necessary, and requiring said commission to make report to Congress at each regular session as to the results of their operations, and what, if any, further legislation is necessary to enable it to more fully accomplish the object of controlling the interstate transportation business, so that it shall be conducted in all its details with honesty and fairness, it may safely refrain from further details at the present time.

The Indianapolis report has the following:

RAILROADS.

The large transactions in railroad property the past year or so have attracted much attention, as they evidence the disposition of capital to invest in this species of property, and have caused large combinations to be formed by which continuous lines from the Atlantic Ocean to the Mississippi River, and even across the continent, are controlled by one management. Such monopolies are opposed to the spirit of our institutions, and are against sound public policy. They wield a great and dangerous power, which needs the restraint of a national law. They dictate to the commerce of the country. At their own irresponsible will they divert trade from its legitimate and natural channels, and into new channels artificially formed, to subvert their interests, tending to the concentration of business at a few principal points. They enforce obedience to their behests. They build up those who aid them in their ends, and strike down those too weak to resist them. They make and destroy the commerce of cities and towns at their pleasure. Under one management manufacturers thrive, under another decay. They say to one city, we will carry your freights at one price, and from another they demand the pound of flesh. They extend favors to one set of shippers, and refuse them to another, even in the same city, by a system of rebates and prompt furnishing of cars. They, by this, practically dictate to the mercantile community who shall do business and who shall not; when a city may build up, when it must go down.

DISCRIMINATIONS.

By the system of rebates merchants of capital, and large capital, too, only are benefited, for by this system a large percentage of capital is locked up in freights waiting for settlement day with the railroads. This practice enables the merchant of capital to buy his merchandise at the same price as his competitors, and to sell at a lower price to buyers, his profit being derived solely from the rebate of freight paid him by the railroad. The vouchers are sent in and payments made at stated intervals, which the merchant of small means could not wait for. Here then, by this system, is destroyed that concert of action which builds up the commercial greatness of cities. A feeling of distrust is created among merchants, a reward is offered to crush energy and enterprise, a system fostered wherein self-interest in men makes them advocate and support that which benefits them individually but injures the community at large. It is educating a powerful lobby to invade the halls of legislation, and by money and influence subvert the best interests of the state. This is all wrong. The theory of our government is that the humble citizen is entitled with the greatest to the same public rights. Railroads are common carriers, public servants created by the state for the benefit of all the people of the state who may choose to employ them. They have no right to make distinctions in freight rates, either by rebates or in any other way which charges one price to one person and a different price to another for the same service. This point has been considered by some of the ablest legal talent of the country, and is not combated.

EFFECTS OF DISCRIMINATION.

The custom, aside from this, is injurious to public policy, inasmuch as it is a conceded fact that twenty active busi-

ness men, engaged in one line of trade, are more valuable to the interests of a city than one man doing the same amount of business. Competition begets trade. It insures the highest prices to the producer, and the lowest prices to the consumer, because it forces quick turns and small profits. It increases the volume of business, because this volume is not controlled by one man's dictation, but by the combined efforts of the many, who are animated by both ambition and gain, to full efforts for increased business.

Indianapolis has felt the full force of the power of railroads, when combined, to retard or advance the interests of a city. We have suffered and protested time and again, have fully shown up the evil, and proved the injustice; yet there resulted nothing but promises made to our ears and broken to our hopes. The establishment of the pool system, ostensibly in the interest of justice to all conflicting interests, is a fraud and a delusion to the mercantile community. It binds the railroads together in so far as it serves their respective interests, but is a rope of sand in so far as it binds them one single day beyond their interests to adhere to it. It is a combination on the one side of vast capital and great interests dictating to the commerce of the country. It is a gigantic monopoly, deciding a question of national importance in its own interests, consulting only its own pleasure. It is counsel, jury and judge, advocating, rendering a verdict, and pronouncing judgment from which there is no appeal.

A QUESTION OF NATIONAL IMPORTANCE.

The conservative management of these great public interests is of national importance. So long as a few men at the financial centres of the country can control these interests by watering the stocks and demanding dividends on a flat value established by their simple dicta, they levy a tax on the commerce of the country and on the people at large to add to their wealth individually. This practically is what they do. The railroad officers, then, of these magnates become arbitrary and irresponsible legislative bodies to levy taxes on the people to pay dividends on fictitious stock, which are measured only by their ability to inflict them. When it is remembered that our Western roads were built with the people's money, and generally by the people of the country through which they are located, for their convenience and benefit, and are now controlled by an oligarchy of capital who direct them against their interests, we state concisely the objects for which they were built and the uses to which they are applied. Railroads are necessary for the development of a country. They are the civilizers, when properly managed, of any country. They are bonds that unite the sections of our country "as with hooks of steel."

A REMEDY SUGGESTED.

The people should not permit them to be prostituted to baser purposes, or any interests, than those of the great body who control the legislation of the country. The injustice done and the vast injury inflicted on commerce by the policy of the railroads is keenly felt and appreciated by the majority of Western merchants and producers who have suffered from their discriminations. No city in the country has had the same cause for complaint as Indianapolis, and it is proper, therefore, for this Board to take the initiative in appealing for relief from the incubus. In searching for the remedy to be applied to this evil, attention has been directed to the English law upon the subject, which devolves upon officials appointed by the government the duty of supervision of the railroads of Great Britain, and invests them with the power of correcting any evils that work injustice to individuals. Under the operations of this law fair rates of transportation are maintained, and the merchants and farmers are secured against any violent and sudden changes in rates, which disorganize business and inflict great injury upon it. When a rate is established for a season, it is maintained till after reasonable notice has been given of a contemplated change. There are no special rates given to favored shippers at the expense of the great body of the patrons of the roads.

Severe penalties are enforced against any violation of the law. With us, a shipper dare not buy produce that seeks a railroad outlet without first satisfying himself that no competitor has secured a special rate of freight. It has come to be an established fact that one must watch more closely the freight rates than the market reports of the article in which he deals, published tariffs being regarded more as showing what the rate is not rather than what it is. The introduction of the Reagan bill in Congress is the first public step taken in the way of a correction of the evil here set forth. It is a very difficult matter to suggest what would be the best method to attain the desired end. State legislation is to be deprecated. A national law will best subserve the purpose. But when the attention of the people is fully directed to the serious danger that the existing monopolies threaten, some wise, just and practical way out of these difficulties will be evolved.

Commercial Policies and the Interests of Boston.

It is frequently overlooked by public opinion, by the government and by railroad managers, that the business of the country changes from year to year, that the railroads undergo constant changes, and that as a consequence railroad policies must be modified in concurrence. A principle which holds good to-day may fail within a few months, and a railroad policy which is legitimate in Belgium or elsewhere may be reversed in this country. The one feature of the present time which has challenged the most attention is the rapid extension of the iron highways through the South and West, particularly beyond the Mississippi and Missouri, and the consolidation of the roads to the east of those rivers. The Pennsylvania road to-day has an annual budget second only to that of the Federal treasury. No sane man has ever opposed those who are willing to risk their own money or to spend their own labor in constructing new roads, while the growth of the great corporations, in the opinion of some, is an alarming symptom. These enormous corporations are thought to be a public danger, and the close alliance between the Albany and the Central, to use a recent illustration, has alarmed many good people. They are afraid that Mr. Vanderbilt will use the alliance to enrich New York at the expense of Boston. But, aside from the fact that trade does not obey the pleasure of Mr. Vanderbilt or any other railway magnate, it may be assumed that railroad owners and managers have no preference in the matter, except business and dividends. Railroad managers are not the creators, but the administrators of railroad property.

Whatever else may be charged against the railroads and their commanders, they have given the country cheap freights, low fares and dispatch of business. The money invested in railroads produces a smaller rate of interest than do United States bonds, and an average mechanic earns in a day enough to pay for all the freight on the food of himself and his family for a whole year. Hence it is idle to charge railroads indiscriminately with extortion, or railway owners with making undue profits. Enormous fortunes have been made out of railroad shares. These fortunes, however, are not the result of legitimate earnings and dividends, but of speculation, and speculation is caused much less by presidents and managers than by speculators and public opinion. All shareholders are naturally bulls, and they do not usually sell

unless a road is manifestly losing, or, more commonly, when public opinion has decided to think unfavorably of some particular line. Whenever a road elects a new set of managers, or forms a new alliance, its shares usually rise, and the daily change in the price of railroad shares is due almost entirely to minor causes, for not many persons have sufficient breadth of judgment to know how any road will stand a year from now.

Hitherto the roads running due east and west have been much the most important, while those running from south to north have had, with few exceptions, a precarious existence. Hitherto the railroads of the cotton states have at best been secondary roads of hardly more than local importance, while there are scarcely any roads of consequence running from southeast to northwest. Hitherto Chicago has been the principal objective point of the great trunk roads. Thus far no road has paid much attention, if any, to rivers, canals and coastwise navigation. The one great purpose has been to connect the great cities, to reach the great agricultural districts, and to facilitate domestic trade. Singularly little attention has been paid by the railroad projectors to foreign commerce, and apparently it has been taken for granted that, with a few exceptions, a railroad south of the Potomac and Ohio and west of the Mississippi and Missouri was an unprofitable enterprise. The spirit of New England has been wonderfully loyal to small roads, and one of the anomalies of the day is, that every traveler between New York and Boston pays toll to as many corporations, or nearly as many, as the traveler between New York and San Francisco.

Then again, nearly every city and state has its day when railroads are protected and fostered, usually by the loan of credits, and when they are bitterly assailed. It is a singular fact that a first investment in a new railroad rarely pays the investor, and that few municipalities have ever become co-partners in railroad property without losses, embarrassments and disappointments. The reasons for this are apparent. Capital invested in railroads pays on the average far below 5 per cent. per annum. Some roads earn more, and the new roads earn, with but few exceptions, less. Hence capital invested in a new road is supposed to be a long investment, to be calculated by dozens or scores of years. Hence he who calculates by the month or by the single year is easily discouraged, and sells out at a loss. Municipal and state credit is never solicited by a railroad, except in an emergency, and in this emergency it would be a miracle if money so invested would at once yield 8 or 10 per cent. per annum. States and municipalities will always do well not to build railroads, and if they wish to encourage them to do so, as the French say, *a fonds perdu*—without the vain hope of being ever reimbursed directly, Massachusetts, the best managed railroad state in the Union, has learned this lesson at considerable cost.

Inasmuch as the country has derived more benefit from the railroads than the railroads have from the country, it is proper to treat these corporations with liberality, or at least with candid favor. And this is especially necessary at a time like the present, when the whole system bids fair to assume new relations. The New England roads propose important consolidations and alliances; it is foolish to oppose these where the roads form a continuous line. A corporation owning or controlling a continuous road between Boston and Chicago assures lower rates and greater despatch than a rival combination of two or three roads. Strong efforts are now made to raise St. Louis to the dignity of a railway centre similar to that of Chicago; it is neither prudent nor probably effectual to oppose this, for the rise of St. Louis does not at all involve the fall of Chicago. No man ever became rich in an honest manner without conferring a benefit upon his friends and neighbors. The whole South is anxious to enlarge its railway facilities; it should be encouraged in so laudable and promising an enterprise. For without multitudinous railroads the South will forever remain poor, provincial and straggling.

Boston is not the terminus of any one of the principal railroads of the country. Neither is it the terminus of the great ocean lines to such an extent as its capital, its port and its natural conditions of trade and commerce require. One of the great questions of the day to this city is how to make it the objective point of the great railroads, of the great steamships, of the great sailing vessels, which some short-sighted persons pretend to hold in slight esteem, and of the coastwise shipping. As to the latter point, it may be remarked, that the port of Providence has already taken the place of Boston for coastwise steamers and sailing vessels loaded in the Southern or Middle states with freight for New England. It is idle and dangerous for the municipality and the state to enter into a copartnership with the railroads or the ocean carriers. But where these are willing to risk their capital and their labor, Massachusetts and Boston would be imprudent and improvident not to yield to them the utmost protection, and to furnish those conditions without which business prosperity is impossible. Until quite recently New York showed how not to do this, and even now the principal city and state of New England cannot take New York for their model. But this is clear, that Boston cannot enjoy the trade of the country and the commerce of the world unless it makes this city the safest, the cheapest and the most attractive centre. Boston has during the last 25 years become a great manufacturing centre. Of manufacturing it needs no less; but of trade and transportation, of commerce and ocean traffic it needs more. In its intercourse with the great cities of the West, Boston is at a disadvantage as compared with New York, Philadelphia and Baltimore, and this reacts upon its commerce, for the steamers and vessels prefer that port, other things being equal, where they are sure of a return cargo. The application of these statements to the railroads, to the Hoosac Tunnel, to the Cape Cod Canal and to the terminal facilities will result in the dictation of a commercial policy simple enough in its character, and yet so vast in its execution as to invite that great commercial and executive genius to which Boston owes her grandeur.—*Boston Advertiser*.

Society of Mechanical Engineers.

The meeting for the organization of this society was held at the Stevens Institute in Hoboken, Wednesday, April 7. The following gentlemen were present:

LIST OF NAMES.

Chas. W. Isbell, New York; John F. Ward, Jersey City; W. H. Weightman, A. Faber du Faur, New York; Robert Briggs, Philadelphia; Chas. Offery, Westbrook, Conn.; Charles Gordon Buchanan, Rockaway, N. J.; H. S. Hayward, Jersey City; H. E. Parson, New York; Wm. J. Logan, Brooklyn, N. Y.; R. G. Evert, Samuel S. Webber, New York; John Cotter, Norwalk, Conn.; Chas. A. Moore, Boston; W. Barnett Le Van, Philadelphia; Chas. B. Richards, Hartford, Conn.; L. T. Lyne, Jersey City; Thos. Pickering, Portland, Conn.; Joseph J. White, Smithville, New York; R. H. Soule, Baltimore; John W. Cloud, Altoona, Pa.; Harris Tabor, Corning, N. Y.; Francis E. Galloupe, J. Larcom Walls, Providence, R. I.; Jas. A. Burden, Troy, N. Y.; F. F. Frimstone, Easton, Pa.; Fred. Keppy, Bridgeport, Conn.; Albert Stearns, Brooklyn, N. Y.; Wm. E. Bartows, Hartford, Conn.; Edward W. Thomas, John

Scott, Willimantic, Conn.; C. H. Brown, Fitchburg, Mass.; Prof. S. W. Robinson, Columbus, O.; John M. Wallis, Baltimore; Horace B. Miller, New York; Robt. W. Hunt, Troy, N. Y.; W. F. Durfee, Bridgeport, Conn.; Joshua Rose, New York; George S. Strong, Philadelphia; John L. Gill, Jr., Pittsburgh, Pa.; David N. Melvin, Lincleville, Staten Island; F. F. Hemenway, Troy, N. Y.; Wm. H. Hoffman, Passaic, N. J.; Carlton W. Nason, New York; F. H. Richards, Springfield, Mass.; Jackson Bailey, Lycurgus B. Moore, Fredk. M. Wheeler, New York; C. C. Newton, Cleveland, O.; Robt. Grimshaw, Ph. D., Philadelphia; David P. Davis, Jersey City; Geo. M. Copeland, Wm. Lee Church, New York; Gardner C. Hawkins, Boston; Geo. A. Barnard, New York; Horace Lee, Philadelphia; Sam'l W. Powell, Ithaca, N. Y.; Jerome Wheelock, Worcester, Mass.; Alfred B. Couch, Philadelphia; C. C. Collins, Newark, N. J.; S. W. Baldwin, Yonkers, N. Y.; Charles T. Porter, Newark, N. J.; W. E. Ward, Port Chester, N. Y.; E. D. Leavitt, Jr., Cambridgeport, Mass.; Geo. B. Mallory, M. N. Forney, A. H. Emery, Wm. H. Wiley, New York; G. Leverich, Brooklyn, N. Y.; E. F. Wells, New York; H. A. Hill, Boston; W. L. Surland, New Haven, Conn.; F. W. Bacon, Boston; John E. Sweet, Syracuse, N. Y.; Charles T. Thompson; Washington Jones; W. H. Scranton; W. Cogne, New York; C. C. Starkweather, New York; W. H. Scranton, Oxford Furnace, N. J.; J. C. Bayles, New York; Wm. Hewitt, Trenton, N. J.; A. Vanderbilt, John Fish, Lewis F. Lyne, New York.

Mr. Henry R. Worthington was elected Chairman and Mr. J. C. Bayles Secretary of the meeting.

The Committee on Organization made a report, and the constitution and by-laws, as recommended by it, were adopted with some unimportant amendments.

The conditions of membership, as stated in these rules, are as follows:

MEMBERSHIP.

The Society shall consist of members, honorary members, associates and juniors.

Mechanical, civil, military, naval, mining and metallurgical engineers and architects only, may be candidates for membership in this society.

To be eligible as a *Member*, the candidate must have been so connected with some of the above specified professions as to be competent, in the opinion of the Council, to take charge of work in his department either as a designer or constructor, or else have been connected with the same as a teacher.

Honorary Members, not exceeding 25 in number, may be elected. They must be persons of acknowledged professional eminence, who have virtually retired from practice.

To be eligible as an *Associate*, the candidate must have such a knowledge of or connection with applied sciences as qualifies him, in the opinion of the Council, to cooperate with engineers in the advancement of professional knowledge.

To be eligible as a *Junior*, the candidate must have been in the practice of engineering for at least two years, or he must be a graduate of an engineering school.

[The term "Junior" applies to the professional experience, and not to the age of the candidate. Juniors may become eligible to membership.]

All members and associates shall be equally entitled to the privileges of membership, provided that honorary members who are not also members or associates, and juniors, shall not be entitled to vote, nor to be members of the Council.

The initiation fee of members and associates is fixed at \$15, and the annual dues at \$10. The initiation fee of juniors is to be \$10, and the annual dues \$5.

The affairs of the Society are to be managed by a Council consisting of a President, six vice-presidents, nine managers, and a Treasurer. The President and Treasurer are to hold office for one year, the vice-presidents for two, and the managers for three.

The Secretary is to be appointed, and may be removed by the Council.

The following officers were elected:
President.—R. H. Thurston, Professor Mechanical Engineering, Hoboken, N. J.

Vice-Presidents.—H. R. Worthington, Hydraulic Engineer; Coleman Sellers, Mechanical Engineer; Eckley B. Cox, Mining Engineer; Gen. Q. A. Gillmore, U. S. A.; Wm. H. Shock, U. S. N.; A. L. Holley, New York.

Managers.—W. P. Trowbridge, Professor Engineering, Columbia College, New York; Theo. N. Ely, Superintendent Motive Power, Pennsylvania Railroad, Altoona, Pa.; J. C. Hoadley, Mechanical Engineer; Washington Jones, Mechanical Engineer; Wm. B. Cogswell, Mechanical and Mining Engineer; F. A. Pratt, Mechanical Engineer; Chas. B. Richards, Mechanical Engineer; Wm. B. Bement, Mechanical Engineer; S. B. Whiting, Mechanical Engineer.

Treasurer.—L. B. Moore.

The gentlemen who attended the meeting were most hospitably entertained with lunch at the house of President Morton, of the Stevens Institute. Much regret was expressed at the absence of Mr. A. L. Holley, who, owing to illness, was unable to be present.

National Association of General Passenger & Ticket Agents.

We have heretofore published an account of the meeting at Cincinnati, and now give a more extended report, from the official proceedings.

The meeting was called to order on the morning of March 16 by Vice-President Shattuc. Of the 126 members there were 106 present.

The minutes of the last meeting were approved as published. The convention then elected officers for the ensuing year as heretofore noted—W. B. Shattuc, President; John W. Brown, Vice-President; A. J. Smith, Secretary.

The following nominations were then made and approved: For members of the Executive Committee, Messrs. O'Brien, Thrall and Peerce; for General Committee, Messrs. Chandler, Davant and Snow.

An informal discussion was allowed by the Chair on a suspension of the rules.

The following resolution was offered by unanimous consent and adopted:

Resolved, That the making of rates for the delegates to the National Political Conventions, and for the assembly of Knights Templar, to be held in Chicago, in August next, be referred to the General Committee.

Adopted unanimously.

On motion, the Convention went into a Committee of the Whole on Passenger Rates, with John W. Brown as Chairman thereof, and continued in session, with necessary intervals, until 10:20 a. m. Wednesday, 17th, when it arose and reported to the Convention through its Chairman for the purpose of allowing an informal discussion on the subject of an amendment to the by-laws (no objection being offered). Remarks were made by Messrs. Ford, Atmore and Waldo, and the by-laws were finally amended by striking out sections 8 and 14, all of section 15 after the word present, and all of section 16 after the word present.

The following was then offered and adopted unanimously:
Resolved, That immediately after the election of officers, the President shall appoint a committee of fifteen or more

(with the privilege of adding thereto at any time), to serve for one year, on the making of passenger rates, which committee shall serve during the sitting of the Convention.

On motion, the President was instructed to appoint the committee by roads, whereupon the following were appointed:

Pennsylvania Company.
Missouri, Kansas & Texas.
Louisville, Nashville & Gt. Southern.
Atlantic & Great Western.
Hannibal & St. Joseph.
Chicago, Burlington & Quincy.
Atlantic Coast Line Railways.
Cincinnati, Hamilton & Dayton.
St. Louis, Iron Mountain & Southern.
Illinois Central.
Piedmont Air Line.
Central Short Line.
Savannah & Charleston.
Jeffersonville, Madison & Indianapolis.
Chicago, St. Louis & New Orleans.
Pittsburgh, Cincinnati & St. Louis.
Cleveland, Columbus, Cincinnati & Indianapolis.
Pennsylvania Railroad.
Lake Shore & Michigan Southern.
Wabash, St. Louis & Pacific.
New York, Lake Erie & Western.
Missouri Pacific.
Baltimore & Ohio.
Chicago & Northwestern.
Chicago, Rock Island & Pacific.
Columbus & Toledo.
Columbus & Hocking Valley.
Michigan Central.
Savannah, Florida & Western.
Central, of Georgia.

The committee above named selected as their Chairman Mr. H. R. Dering, and at once proceeded with the unfinished work on the rate sheet.

The next order of business being the location of next place of meeting, New York, Boston and Montreal were placed in nomination, and New York was chosen.

After a recess, the following was adopted:

Resolved, That the matter of round-trip tickets to the Republican and Democratic Conventions be referred to the Western and Southern Associations for action in regard to their territories, and that they make known the result of such action to the General Convention through its Chairman.

The Secretary reported progress on the matter of securing and compiling the stop-over regulations of the various railway and steamboat lines of the United States and Canada. In connection with that subject, the following was unanimously adopted.

Resolved, That the Secretary be relieved from the further prosecution of the duties assigned him under Section 10 of the report of the General Committee, made at the special convention at New York, Sept. 13, 1879, and that the information already collected be forwarded to the editor of the *Official Guide*, with a request that he use such of it as may be necessary to perfect the information already in the *Guide* on this subject.

Several communications were referred, and thanks presented for the offered use of the rooms of the National Railway Publication Company in New York. Mr. C. C. Cobb was chosen an honorary member.

By direction of the Association, the Secretary read the resolution adopted at New York regarding extra baggage, whereupon the following was offered and adopted:

Resolved, That between competing points, and on all classes of through business, the excess baggage rate per 100 lbs. shall be 15 per cent. of the first-class unlimited ticket fare.

The following was then adopted:

Resolved, That a committee of three be appointed by the Chair to take into consideration a revision of the Constitution of this Association. This in view of the recent changes made in the By-Laws.

The chair appointed as such committee, Messrs. Kimball, Stevenson and Ford.

The following was adopted:

Resolved, That the resolution adopted by this Association regarding the rates for excess baggage, as also Section 12, Report of General Committee at the New York meeting, which is as follows, be published on the first page of the Association rate sheet:

"12. Every line represented in this Association shall require its Baggage Agent to attach to the strap check of all extra through baggage, a tag on which shall be stated the amount of extra baggage money collected for the carriage of such baggage from starting point to destination; and we hereby agree to report to each line interested, from and after Sept. 1, 1879, its proper proportion of such collections, on the basis of regular ticket divisions."

The following was also adopted:

Resolved, That the rate for corpses shall be one full unlimited first-class fare, regardless of age.

After some discussion on previous motions which were by consent withdrawn, the following was offered and adopted unanimously:

WHEREAS, There are a large number of persons procuring passes over our different lines under false representations, and other persons who are regularly given passes loan and sell them; therefore,

Resolved, That the Secretaries of the Southern, New England and Trunk Line Associations be requested to publish a Black List, similar to that now issued by the Western Association, and that an exchange be arranged, thus giving the necessary information to all interested.

On motion, a special committee of five was appointed to devise some means whereby the Passenger Department might get proper credit for such passes as are issued for the purpose of controlling freight. Their report to be the special order for 10 a. m., Thursday, 18th.

The chair appointed as such committee, Messrs. Kimball, Charlton, Boylston, Kendrick and Atmore.

The following was then adopted:

Resolved, That the members of this Association hereby agree to strictly enforce the rule for collecting half-fares on trains for children between five and twelve years of age.

The following resolution was adopted:

Resolved, That from and after the passage of this resolution, all line members of this Association discontinue the practice of issuing free transportation made out to bearer or in blank, in consideration of advertising or for any other purpose whatever.

The matter of paying commissions to scalpers was brought up, and, by request, Mr. Danley, Secretary of the Southern Association, read the action of that Association on the subject; after some discussion, participated in by Messrs. Charlton, Atmore and Wentworth, upon motion the subject was referred to a special committee of five to report to this Convention. The chair appointed as such committee, Messrs. Charlton, Davant, Danley, Wentworth and Cary. The Convention then adjourned till next day.

THIRD DAY.

The committee to whom was referred the matter of passes issued on account of Freight Department, asked for further

time. No objection being offered, time was extended as requested.

The committee to whom was referred the matter of commissions paid to scalpers reported as follows:

It is the sense of this National Association of General Passenger and Ticket Agents, that to maintain passenger rates and preserve passenger revenue, so as to derive any profit from passenger business, it has become absolutely necessary to discontinue all payments of any nature whatever to scalpers or other persons whose purpose or practice it is to sell tickets at less than tariff rates. That the practice of making payments of any kind to scalpers, ticket brokers, huckmen, hotel porters or any other parties not regularly salaried ticket agents of transportation lines, is destructive of passenger revenues and detrimental to the interests of the passenger department. That the action of certain lines in opposition to the spirit of the above resolution meets our unqualified condemnation, and we pledge ourselves, individually and as an association, to use whatever influence we possess with our own and their managers to correct these evils which we know exist and to be in direct hostility to, and destructive of, our revenues.

That this declaration be printed in circular form, and a copy of the same sent to the Presidents, General Managers and General Superintendents of every road in the United States and Canada, with a request that they indorse the same, and instruct their Passenger Departments accordingly.

Remarks on the report of the committee were made by Messrs. O'Brien, Stevenson, Hair, Davant, Clark and Lord. A motion was made and seconded that the report of the committee be adopted. The yeas and nays were called for, with the following result: Adopted by a vote of 45 yeas to 4 nays.

The special committee to whom was referred the matter of free passes issued on account of the Freight Department, reported as follows:

Whereas, Many lines, constituents of this Association, are carrying upon their passenger trains large numbers of persons on *free passes*, or tickets at reduced rates, which are issued for the purpose of procuring and controlling freight traffic, thereby reducing the earnings of the passenger department, to the advantage of the freight department, for which no equivalent is rendered, and without, as may be demonstrated, adding to the actual income of the company; therefore, be it

Resolved, That the members of this Association hereby respectfully petition their respective managing officers to allow passenger earnings to be credited at full rates for all such free or reduced transportation, unless specifically limited to freight trains.

Resolved, That the Secretary be hereby instructed to publish the foregoing in a circular, and address one copy of the same to the managing officers of each line represented in this Association, calling special attention there to.

This report was adopted.

The Committee on Amendments to Constitution reported that no changes were necessary; which was adopted.

A resolution that no tickets be received with a "paster" or separate contract, was lost.

After a recess until afternoon the Committee on Rates reported through its Chairman, Mr. Dering, the complete revision of the rate sheet.

On motion the report of the committee was adopted; the rates as reported, to take effect May 1, 1880.

The General Committee reported as follows:

Your General Committee beg to submit the following report:

Referring to letter of Quartermaster General, asking that a uniform rule may be adopted so that all lines will accept his order for transportation and furnish through tickets to destination named, we suggest that a Committee consisting of representatives from the land-grant roads should take up this question and report action at our next Convention.

Referring to a request of the Chairman of Committee on Transportation for rates to attend Millers' International Convention, to be held in Cincinnati in June next, also, to letter from Miss M. J. Morton, asking for rates for parties to attend religious gatherings at different points, we suggest that the Secretary be directed to notify these parties that such arrangements must be made with the terminal lines at points from where the transportation is desired.

The report as rendered was adopted.

The Chair then appointed Mr. Kimball Chairman of the Committee of Land-Grant Roads referred to in the report of the General Committee.

After the usual courtesies, the Convention adjourned.

Transportation in Congress.

In the House on the 6th:
The Committee on Railroads reported a number of bills, among which were the following:

Authorizing the Secretary of War to contract with the San Antonio & Mexican Border Company for the immediate construction of a railroad from San Antonio, Tex., to the Rio Grande, at or near Laredo.

Authorizing the Chicago, Milwaukee & St. Paul Company to extend its lines through the territory of Dakota.

Authorizing the Worthington & Sioux Falls Company to extend its road in the territory of Dakota from Sioux Falls to the Missouri River.

In the House on the 7th:

Mr. McLane, of Maryland, from the Committee on Pacific Railroads, reported a substitute for the bill "to extend the provisions of the Pacific Railroad Sinking Fund act." The bill is accompanied by a report which sets forth that the substitute bill proposes to alter and amend the Sinking Fund act of May, 1878 (commonly known as the Thurman act), and the act amendatory thereto, in the following particulars: First, it authorizes the Secretary of the Treasury to invest the sinking fund of the Union Pacific and Central Pacific railroads in bonds of the United States other than 5 per cent. bonds, or in the first-mortgage bonds of the companies, as he may elect; second, it extends the time of settlement—necessary to ascertain the amount of the payments to be made by the companies—from one month to three months; third, it makes the settlements and payments semi-annual instead of annual; fourth, it authorizes the Secretary of the Treasury to transfer the moneys now in the Treasury and due said companies to the sinking fund. The fourth section of the bill extends the provisions of the act, as well as those of the act of which it is amendatory, to those persons or companies who become possessors of the roads by lawful purchase or by consolidation. The fifth section extends the provisions of the Sinking Fund act to the Kansas Pacific, the Central Branch of the Union Pacific, and the Sioux City & Pacific Railroads, since these three roads were created by the same act as the Central Pacific and Union Pacific Roads, and constitute the money-subsidized roads as created by the act of 1862 and acts amendatory thereto. Accompanying the report is a letter from Secretary Sherman stating that future investments on account of the sinking fund in government bonds must be made in 4, 4½ per cents., or currency sixes, and favoring the amendment which gives the Secretary discretionary power to invest in first-mortgage bonds of the respective companies.

THE SCRAP HEAP.

American Locomotives in New Zealand.

The *New Zealand Times* of Feb. 12, 1880, published at Wellington, New Zealand, gives the following account of the performance of an American freight locomotive. This locomotive was one of six constructed by the Baldwin Locomotive Works early in 1879 for the government of New Zealand, whose railroads are of 3½ ft. gauge. The locomotives are of the "Consolidation" type, namely, eight wheels coupled and a pony truck. The following are general dimensions: Cylinders, 15 x 18 in.; driving-wheels, 3 ft. diameter; total wheel base, 17 ft. 10 in.; driving-wheel base, 11 ft. 4 in.; weight of engine in working order, about 58,000 lbs.; weight on driving-wheels, about 50,000 lbs. The following is what the *New Zealand Times* says:

"On Monday afternoon one of the lately imported American engines of the 'Consolidation' pattern hauled the heaviest train that has ever been drawn in New Zealand. The engine was working for the day on the Port goods traffic (says the *Lyttelton Times*), and in the usual run of work brought through the tunnel by the 4:30 p. m. goods train no fewer than 79 loaded trucks and the brake van, or a load of about 700 tons. The engine started with a steam pressure in the boiler of 130 lbs. per square inch, and in ascending the heavy grade in the tunnel the pressure never fell below 115 lbs. per square inch, although the fuel used was that from the Springfield coal mines. At Heathcote another lot of 31 wagons was attached, and with this great load of 108 loaded wagons, or about 1,000 tons, the engine reached Christchurch with the greatest ease, performing the whole distance at the rate of 10 miles per hour, including the stoppage at Heathcote. The total length of the train was 2,100 ft., or nearly half a mile, and the load consisted entirely of stone, coal, heavy timber and drain pipes. Although the trial was a brilliant success, as the men get more accustomed to the engines and the engines have worn off their first stiffness, there can be no doubt but that they will prove themselves in a still greater measure the most powerful iron horses in the country. The driver of the engine is named James Orr. It may be added that these engines have now proved themselves to be the best for pulling heavy trains, and the class "K" engines, also American built, are the fastest in the colony, and are always used for the express trains."

The following extract from a letter published in the *English Mechanic* of Feb. 20 will be interesting in this connection. The correspondent writes from New Zealand and is evidently not an American, as he says:

"Starting with a strong British prejudice against the American locomotives, a dislike intensified by their gaudy and 'gingerbread' appearance at first sight, I was nevertheless converted to genuine admiration of their many good points, and particularly their 'handiness' as compared with the English engines working on the same lines. This opinion I found to be shared by everybody who had much to do with them, especially Mr. Allison Smith, the Locomotive Superintendent, and their drivers, the latter now deeming it promotion to be allotted to one of these once-despised 'Yankee notions.' I still think them well suited to the particular work they have to do, and they certainly perform that work admirably; but I have grave doubts as to their durability or economy over a series of years. Indeed I have written very strongly in this colony against the importation of any more engines from America, believing, as I do, that English makers, if only provided with the necessary specifications, can produce an article possessing all the good points of the American locomotive, while infinitely superior in point of material and durability."

This seems a little like saying that if some one would only have the goodness to tell the English makers how to build locomotives they would then do it quite as well there as it is now done here. No one, or very few, doubt this. The true inwardness of the matter seems to be that in this country builders have learned how, and in England they have not, and so long as this condition of things lasts it will be a good reason for preferring American locomotives.

A correspondent here writes us in relation to this same subject:

"The *Engineer* says that the Yankees get their orders for engines from English colonies by sending out agents and soliciting for orders. The other day I received orders for twelve locomotives from the Engineer in Chief of the colony of South Australia. At the time this order came I did not know, nor had I ever heard of the name of any one of the officers of that government, and in fact I had even forgotten that there was such a colony as South Australia."

Testing Watches.

The Winchester Observatory of Yale College has made arrangements for testing scientifically time-pieces, in order to ascertain their accuracy under different circumstances. Purchasers of watches of certain classes in considerable quantities, as for railroads, can have samples tested and then will know very nearly how far they can be depended upon. Different classes of certificates are issued. Class I. is given for watches or chronometers that have been rated during 42 days, as follows: With the dial up 12 days at ordinary temperatures (65 to 75°), one day in the refrigerator (40°), and one day in the oven (90°); with the dial vertical 14 days with pendant up, two days with pendant to right and two days with pendant to left; with the dial down two days, and with the dial up eight days. Class II. is issued with time-pieces rated 24 days; with the dial up, one day in the refrigerator, one day in the oven and eight days at ordinary temperatures; with the dial vertical eight days with the pendant up, two days with it to the right, and two with it to the left. Two other classes are issued for tests covering shorter periods, and others especially for chronometers and clocks. A charge of \$3 is made for a certificate of Class I., \$2.50 for Class II., \$2 for Class III., and \$1 for Class IV. The certificate of Class I. gives the daily rate, the variation and the temperature for every day.

How a Girl Stole a Ride.

"Will you please assist me?" said a sweet-voiced young lady at the Union Depot this morning, about nine o'clock. The remark was addressed to a passenger brakeman who was standing near a freight train on the Panhandle track. The latter looked around, but failing to see any person from whom the request was likely to come, he was about to walk away, when the words were repeated. He looked around again, and was considerably surprised to observe that the remark proceeded from a rosy-faced and well-dressed young Miss, who was standing in the side doorway of an empty freight car. The situation was a strange one, and the young lady showed her evident embarrassment in her face, while as for the brakeman, he was too utterly confounded by the scene to say a word. He helped her down as gracefully as possible, however, and, as the young lady was evidently desirous of explaining how she got there, her new friend walked up the platform a short distance with her. She was only about eighteen, and appeared to be not only attractive in person, but intellectually. "You see," she said, after her blushes had partially disappeared, "I live out the Panhandle road some distance—no matter where—and this morning I had occasion to visit some friends at Irwin. I was in a terrible fix; for, you see, I hadn't money enough to pay the fare, and I didn't know

LOCOMOTIVE RETURNS, DECEMBER, 1879.

Master Mechanics of all American railroads are invited to send us their monthly returns for this table.

NAME OF ROAD.	Number of locomotives in service.	Number of miles operated.	MILEAGE.		MILES RUN TO		Tons of coal.	Average per engine.	Plut of oil.	Cost of wood.	Average No. of freight cars hauled.	Average cost per freight car per mile, cents.	COST PER MILE IN CENTS FOR					AVERAGE COST OF
			Total.	Average per engine.	Repairs.	Fuel.							Stores.	Miscellaneous.	Engines, firemen and wipers.	Wood per cord.		
Allegheny Valley, River Division*.	130	37	80,221	2,411	38.26	21.05	22.00	0.864	0.64	3.81	0.55	5.08	16.08	5.84	2.15	2.73		
Low Grade Div.	120	18	42,175	2,943	27.37	18.24	13.50	1.027	1.74	3.75	0.64	5.83	11.08	5.83	2.15	2.73		
Atlantic & Great Western, 1st and 2d Divs.	298	78	257,245	3,298	33.18	15.54	18.40	4.06	6.00	0.59	0.93	5.04	17.55	5.04	2.15	2.73		
Third and Fourth Divs.	107	51	143,306	2,890	24.05	25.39	16.80	5.28	16.33	0.38	0.60	5.51	22.16	5.51	2.15	2.73		
Mahoning Div.	88	43	148,067	3,219	33.43	22.90	10.50	3.80	0.33	0.41	0.30	5.28	15.94	5.28	2.15	2.73		
Camden & Atlantic	67	12	22,600	1,880	47.00	11.00	10.00	0.32	8.37	0.75	0.75	30.0	4.00	30.0	4.00	2.73		
Central Pacific, Western Div.*.	128	22	71,225	2,535	51.21	19.00	11.43	6.15	11.43	0.45	0.38	7.77	38.18	7.77	5.25	5.50		
Northern & San Pablo Div.*.	158	28	66,254	2,305	38.15	19.31	10.31	5.20	15.32	0.44	0.37	7.10	28.55	7.10	5.25	5.50		
Vallejo Div.*.	157	9	25,211	2,805	52.60	20.04	10.04	2.37	11.06	0.34	0.08	7.04	26.92	7.04	5.25	5.50		
Tulare Div.*.	171	10	24,353	2,435	30.40	18.44	10.00	0.06	14.75	0.49	0.20	3.80	28.02	5.75	5.50	5.50		
Los Angeles, San Diego, Yuma & Wilmington Divs.*.	600	24	58,119	2,430	50.39	21.51	10.00	4.61	9.86	0.42	0.24	7.40	32.02	7.40	5.50	5.50		
California Pacific Div.*.	178	11	35,474	3,219	35.91	22.05	10.00	4.25	16.38	0.44	0.28	6.32	28.07	6.32	5.50	5.50		
Stockton & Copperopolis.	49	3	5,579	1,980	27.67	20.83	10.00	3.80	9.54	0.34	0.33	6.00	20.61	6.00	5.50	5.50		
Sacramento Div.*.	150	37	80,048	2,330	20.63	20.63	20.63	4.06	20.69	0.43	0.30	6.08	30.00	6.08	5.50	5.50		
Oregon Div.*.	122	10	21,085	2,400	44.57	10.70	11.70	2.14	12.11	0.31	0.13	7.05	21.74	7.05	5.50	5.50		
Truckee Div.*.	205	27	71,002	2,658	34.10	27.72	11.77	4.80	18.20	0.40	0.27	8.20	31.90	8.20	5.50	5.50		
Humboldt Div.*.	100	18	57,383	3,188	38.67	22.35	10.00	3.68	10.33	0.37	0.30	7.39	31.17	7.35	5.50	5.50		
Salt Lake Div.*.	919	29	65,228	2,940	28.66	20.42	10.00	3.81	20.22	0.47	0.20	6.84	30.00	6.75	5.50	5.50		
Chicago & Eastern Illinois.	133	28	80,152	3,184	25.50	17.43	10.00	3.05	4.49	0.40	0.30	5.90	18.00	5.90	5.50	5.50		
Cin. LaFayette & Chicago.	10	10	29,800	2,093	23.70	14.43	10.00	2.18	9.49	0.43	0.30	5.00	18.00	5.00	5.50	5.50		
Cleve., Col., Cin. & Ind.*.	472	143	491,207	3,000	33.91	20.08	10.00	2.54	6.81	0.56	0.40	6.51	16.42	6.38	2.38	3.80		
Cleveland & Pittsburgh*.	225	84	102,714	2,294	38.44	19.16	17.76	3.20	3.90	0.46	0.35	6.18	16.00	6.18	1.40	3.80		
Cleveland, Tus. Valley & Wheeling.	124	16	42,048	2,631	32.53	19.06	35.00	5.08	1.88	0.48	0.38	5.84	13.38	5.84	1.40	3.80		
Dela., Lacka. & Western, Bloomsburg Div.*.	80	22	62,753	2,822	30.00	32.45	10.00	3.22	4.43	0.52	0.42	4.22	6.17	4.22	1.75	3.80		
Eric & Pittsburgh*.	90	20	71,234	2,456	36.80	18.06	16.50	0.892	1.29	4.73	0.48	6.18	13.81	6.18	1.74	3.80		
Grand Rapids & Indiana.	332	34	105,218	3,045	36.85	30.82	10.81	2.87	7.37	0.46	0.44	6.14	17.98	6.14	2.00	3.80		
Green Bay & Minnesota.	240	15	31,825	2,256	62.14	22.25	22.25	2.41	7.90	0.29	0.04	4.55	15.28	4.55	1.80	3.80		
Houston & Texas Central.	408	100	299,497	2,878	31.81	15.77	10.00	3.89	22.34	0.37	0.77	6.17	19.40	6.17	1.50	3.80		
Illinois Central, Chicago Div.*.	402	100	299,497	2,878	31.81	15.77	10.00	3.89	22.34	0.37	0.77	6.17	19.40	6.17	1.50	3.80		
North Div.*.	345	51	115,462	2,204	33.81	16.31	13.36	1.06	4.58	0.19	0.19	5.50	11.34	5.50	3.06	3.80		
Springfield Div.*.	113	16	28,087	1,755	33.67	18.57	13.41	4.17	3.08	0.20	0.20	4.78	13.00	4.78	3.06	3.80		
Iowa Div.*.	401	40	114,620	2,491	26.57	16.70	11.70	4.79	8.06	0.30	0.30	5.72	18.06	5.72	2.08	3.80		
Jeffersonville, Madison & Ind.*.	229	42	100,321	2,305	40.00	17.00	12.74	3.90	8.30	0.33	0.26	5.57	19.70	5.57	3.15	3.80		
Kan. City, St. Jo. & Council Bluffs*.	247	35	117,030	2,300	35.00	20.00	18.90	3.70	7.40	0.40	0.40	6.50	16.00	6.50	2.60	3.80		
Kansas Pacific.	88	23	253,765	2,884	21.67	10.76	10.00	4.51	14.72	0.42	0.30	6.30	30.04	6.30	3.15	3.80		
Lake Shore & Mich. So., Buffalo Div.*.	84	10	100,741	2,258	24.35	21.94	10.00	3.89	9.22	0.34	0.34	5.70	18.74	5.70	2.80	3.80		
Eric Div.*.	117	20	280,513	2,085	34.80	21.00	10.00	3.80	10.78	0.30	0.30	5.83	20.50	5.83	2.67	4.08		
Toledo Div.*.	88	28	181,494	2,085	24.80	21.00	10.00	3.80	10.78	0.30	0.30	5.83	20.50	5.83	2.67	4.08		
Mich. Southern Div.*.	208	42	482,341	2,318	35.45	22.92	10.00	3.70	8.83	0.30	0.30	6.08	18.23	6.08	3.13	4.08		
Little Rock, Miss. River & Texas.	100	22	119,770	2,432	28.61	14.08	18.22	4.31	6.44	0.54	0.54	5.74	17.13	5.74	2.08	4.08		
Louisville, Nashville, First Div.*.	332	34	105,218	2,474	28.61	14.08	18.22	4.31	6.44	0.54	0.54	5.74	17.13	5.74	2.08	4.08		
Second Div.*.	200	33	77,090	2,630	27.81	21.73	15.43	3.00	6.78	0.24	0.27	5.07	16.70	5.07	2.14	4.08		
Memphis Div.*.	131	22	52,777	2,300	30.81	16.91	16.70	1.296	4.30	7.90	0.35	5.03	16.60	5.03	2.48	4.08		
Nash. & Decatur Div.*.	122	30	29,085	2,484	23.57	14.63	16.60	3.21	8.91	0.34	0.40	5.70	16.74	5.70	2.60	4.08		
South & North Alabama.	180	30	100,812	3,029	31.02	15.50	13.00	4.11	6.74	0.33	0.33	6.07	16.88	6.07	2.72	4.08		
Evansville, Hen. & Nash. Div.*.	136	20	64,704	2,402	32.19	19.39	13.30	2.60	3.80	0.25	0.25	5.42	13.70	5.42	2.21	4.08		
Marquette, Houghton & Ontonagon.	88	13	14,324	1,102	36.56	27.33	20.40	0.80	11.30	0.44	0.44	6.18	18.28	6.18	2.80	4.08		
Missouri, Kansas & Texas*.	800	82	290,213	3,049	34.12	18.61	16.30	4.07	5.11	0.42	0.40	6.24	17.83	6.24	2.83	4.08		
North Cent., Elkhart & Can. Div.*.	147	15	111,350	2,474	28.61	13.51	10.00	4.31	6.44	0.54	0.54	5.74	17.13	5.74	2.08	4.08		
Pennsylvania, New York Div.*.	120	11	328,200	3,018	29.77	10.35	10.00	2.40	9.20	0.80	0.80	5.40	15.00	5.40	2.80	4.08		
Amboy Div.*.	190	46	100,225	2,153	46.20	14.55	10.00	0.50	6.10	0.50	0.50	6.10	12.80	6.10	2.80	4.08		
Belvidere Div.*.	103	37	73,094	1,975	31.44	14.01	10.00	4.10	9.30	0.60	0.60	5.40	16.00	5.40	2.80	4.08		
Philadelphia Div.*.	172	139	435,079	3,137	33.12	13.80	10.00	5.40	5.60	0.60	0.60	5.40	16.00	5.40	2.80	4.08		
St. Louis & North Atlantic.	120	11	328,200	2,630	27.81	10.35	10.00	2.40	9.20	0.80	0.80	5.40	15.00	5.40	2.80	4.08		
Pittsburgh Div.*.	220	183	505,657	2,703	23.86	11.85	10.00	4.10	5.10	0.60	0.60	5.40	16.00	5.40	2.80	4.08		
Tyone Div.*.	110	33	78,529	2,390	30.31	17.24	10.00	2.70	6.00	0.60	0.60	5.40	16.00	5.40	2.80	4.08		
West Penn. Div.*.	104	24	47,270	1,970	33.72	31.66	10.00	1.80	3.70	0.39	0.39	4.80	15.00	4.80	2.80	4.08		
Jeffersonville, Madison & Ind.*.	229	42	100,321	2,305	40.00	17.00	12.74	3.90	8.30	0.33	0.33	5.57	17.00	5.57	2.80	4.08		
Bedford Div.*.	37	4	10,013	2,501	30.78	16.74	10.00	2.60	4.90	0.20	0.20	6.30	12.00	6.30	2.80	4.08		
Frederick Div.*.	109	9	18,732	2,081	37.91	18.00	10.00	0.60	7.40	0.50	0.50	5.80	15.00	5.80	2.75	4.33		
Pittsburgh, Va. & Charleston Div.*.	30	14	18,091	1,335	42.67	16.03	10.00	10.80	2.60	0.50	0.50	5.80	15.00	5.80	2.80	4.33		
Pitts., Ft. Wayne & Chi., East. Div.*.	371	135	491,207	3,000	33.91	20.00	10.00	3.91	20.22	0.47	0.20	6.84	30.00	6.84	2.80	4.33		
Western Div.*.	229	111	388,247	3,045	36.47	16.45	21.90	4.94	4.90	0.44	0.44	5.80	18.37	5.80	1.82	1.82		
Pitts., Cin. & St. Louis, Little Miami Div.*.	107	38	110,445	2,906	41.71	18.15	17.66	1.680	4.03	5.10	0.41	2.14	5.36	17.30	5.36	1.80	1.80	
P. C. & St. L. Div.*.	100	22	119,770	2,432	28.61	14.08	18.22	0.980	3.89	0.73	0.50	5.28	15.50	5.28	1.60	1.80		
St. Louis & San Francisco.	120	11	328,200	2,630	27.81	10.35	10.00	2.40	9.20	0.80	0.80	5.40	15.00	5.40	1.60	1.80		
St. Louis & Southeastern.	208	42	482,341	2,318	35.45	22.92	10.00	3.70	8.83	0.30	0.30	6.08	18.23	6.08	1.60	1.80		
Savannah, Florida & Western.	345	22	58,302	2,652	38.08	19.55	10.00	6.10	4.43	0.31	0.31	7.01	17.77	7.01	1.60	1.80		
Wabash, St. L. & P., Ohio & Ind. Div.*.	250	110	295,127	2,562	34.78	10.53	23.59	0.740	3.00	5.02	0.39	7.05	16.85	7.05	1.60	1.80		
Illinois Div.*.	441	72	231,719	3,218	30.00	12.00	19.91	0.750	3.16	5.00	0.33	6.63	15.00	6.63	1.60	1.80		
West Jersey	128	19	36,305	1,914	42.08	17.18	10.00	8.70	5.00	0.59	0.59	7.70	3.60	8.31	3.60	1.80		



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CONTENTS.

Page.	Page.
ILLUSTRATIONS:	GENERAL RAILROAD NEWS:
Rider's Compression Pump	Traffic and Earnings.....198
ing Engine.....189, 190	The Scrap Heap.....193, 199
EDITORIALS:	Old and New Roads.....200
East-Bound Traffic as Af-	National Association of
ected by the Winter and	General Passenger and
the Spring Rates.....194	Ticket Agents.....192
Shareholders and Leases.....195	Transportation in Congress.....192
Texas Railroad Project.....195	ANNUAL REPORTS:
Through Export Rates.....195	Maine Central.....202
Foreign Railroad Notes.....195	Panama.....202
Society of Mechanical Engi-	Cincinnati, La Fayette &
neers.....196	Chicago.....202
Record of New Railroad	MISCELLANEOUS:
Construction.....196	Boards of Trade on Trans-
EDITORIAL NOTES.....196	portation Questions.....190
New Publications.....197	Commercial Policies and
GENERAL RAILROAD NEWS:	the Interests of Boston.....191
Meetings and Announce-	Society of Mechanical En-
ments.....197	gineers.....191
Elections and Appoint-	Locomotive Returns, De-
ments.....198	cember, 1879.....193
Personal.....198	

EDITORIAL ANNOUNCEMENTS.

Passes.—All persons connected with this paper are forbidden to ask for passes under any circumstances, and we will be thankful to have any act of the kind reported to this office.

Addresses.—Business letters should be addressed and drafts made payable to THE RAILROAD GAZETTE. Communications for the attention of the Editors should be addressed EDITOR RAILROAD GAZETTE.

Advertisements.—We wish it distinctly understood that we will entertain no proposition to publish anything in this journal for pay, EXCEPT IN THE ADVERTISING COLUMN. We give in our editorial columns OUR OWN opinions, and those only, and in our news columns present only such matter as we consider interesting and important to our readers. Those who wish to recommend their inventions, machinery, supplies, financial schemes, etc., to our readers can do so fully in our advertising columns, but it is useless to ask us to recommend them editorially, either for money or in consideration of advertising patronage.

Contributions.—Subscribers and others will materially assist us in making our news accurate and complete if they will send us early information of events which take place under their observation, such as changes in railroad officers, organizations and changes of companies, the letting, progress and completion of contracts for new works or important improvements of old ones, experiments in the construction of roads and machinery and in their management, particulars as to the business of railroads, and suggestions as to its improvement. Discussions of subjects pertaining to ALL DEPARTMENTS of railroad business by men practically acquainted with them are especially desired. Officers will oblige us by forwarding early copies of notices of meetings, elections, appointments, and especially annual reports, some notice of all of which will be published.

EAST-BOUND TRAFFIC AS AFFECTED BY THE WINTER AND SPRING RATES.

The great development of the carriage of grain from the West to the seaboard through by rail within the past few years has not heretofore been of much advantage to railroad companies. They have seen their traffic increase enormously, requiring important additions to rolling-stock, etc., but generally without increase and frequently with a diminution of profits. Almost without exception, when the grain traffic has been heavy the rates have been very low, and frequently not high enough to pay the cost of hauling. What was proved was that if the railroads would carry grain to the sea-board at cost or less, they could have an enormous and a growing traffic, and there was not much encouragement in this knowledge. There has been, it is true, a very fair traffic, especially in the fall months of the past three years, at remunerative rates; but the very large traffic of the winter and spring months until this year has been almost without exception at very low rates. Last year, from the middle of February until the opening of navigation near the end of April the rail grain movement was the largest on record; but then the rates were from 20 down to 12½ cents per 100 lbs., and it was assumed by many that if a paying rate had been maintained the movement would have been inconsiderable; and there were some good reasons for thinking that under any ordinary circumstances there could be very little profit in carrying grain from pro-rating points in the West to the sea-board, except from those places which cannot reach the lakes without considerable expense. With an extraordinary foreign demand and high prices in winter a large and profitable traffic could be expected until within a few weeks of the opening of navigation; but generally, if rates were made high enough to leave a tolerable margin of profit it seemed probable that the grain would be forwarded by lake and canal, the win-

ter accumulations being stored at lake ports if the Mississippi route should not afford a favorable winter outlet.

The experience of the past four months, and especially of the past month, gives greater reason to believe that the grain movement may be looked upon hereafter as a large and pretty steady source of income. Rates have been maintained throughout, and at a point not before reached for many years except in the fall months, when there was a great pressure of traffic, and very much higher than had been received after December for the two years previous, when there was a heavy movement. As we have shown heretofore, under the 40-cent rate of the three months ending with February this year, the shipments of the Northwestern markets were much larger than in any corresponding three months, except in the two preceding years, and not very much (8 per cent.) less than last year, when the rate was so much less; and the Atlantic receipts were also very large, and but 6½ per cent. less than last year.

It may be said, however, that this has been one of the exceptional winters, mentioned above, when a large foreign demand and high prices make possible a really heavy movement at remunerative rates. There is something in this. There has been a great deficiency in the crops of Europe, wheat most of the winter has been higher than for several years previous, and grain exports, though not so large as last year, have still been very large. But on the other hand the movement of wheat, which is the grain chiefly needed in Europe, has been artificially checked, having been held for higher prices by speculators, and the chief movement has been in corn, which has not borne a very high price, though a much higher one than last year. There can be no doubt whatever that the movement of wheat was greatly reduced by the speculative movement, and not by the rail rates, the proof being that corn, which bears less than half the price and consequently is much more affected by the cost of carriage, has moved in greater quantities than ever before in the winter, and that since February the wheat movement, especially the export movement, has grown large, although the total cost of transportation from the west to Europe (in spite of the reduction of the rail rate by an eighth) has been greater than at any other time this winter, by reason of the great advance in ocean rates, which amounts to eight or nine cents a bushel, and is nearly three times as great as the reduction in rail rates.

But whatever may be said of the movement of the three winter months, the March traffic seems to us especially significant and most encouraging.

In the first place, this traffic was had in a time of lower prices; corn is about 9 cents and wheat about 20 cents per bushel lower in New York than on the first of January. Next, and most important, the near approach of the opening of navigation has made shippers less dependent upon the railroads. It of course makes a great difference whether the opening of navigation is three months or one month off. March rates are always affected by the approaching opening of navigation, which is usually not till near the first of May, and this year the effect should have been greater than ever, because at one time it was expected that navigation would be open by the middle of the month, and it actually was open on the third of April, on which day several cargoes of corn cleared Chicago for Buffalo. The grain rate had been reduced from 40 to 35 cents on the 1st, but 35 cents is probably nearly twice as much as the average rate actually received in March last year. Under these circumstances the shipments of grain from Northwestern markets (and chiefly from lake ports) in the four weeks ending March 27 have been:

	1880.	1879.	1878.	1877.
	12,745,012	9,013,650	9,267,391	3,592,790

Nothing could better prove that a 35-cent rate is not prohibitive or even greatly restrictive. There never before was a month in which the rail shipments were so large, and the approaching opening of navigation instead of checking them seems actually to have stimulated them. Thus the shipments in successive weeks were:

Week ending—	
March 6.....	2,285,216 bushels
" 13.....	2,593,032 "
" 20.....	3,604,550 "
" 27.....	4,172,104 "

In the last week it was known that the lakes would be open within a very short time, there were still some vessels disengaged in the principal Western ports, the rail rate was firmly held at 35 cents, and yet the rail shipments were the largest ever made in a single week. Certainly this is pretty good evidence that a large grain traffic may be had at profitable rates in spite of the competition of the lake and canal.

Further evidence of the activity of traffic under the March rate (which was 35 cents for grain and flour

only, and higher for all other freights) is given in the following statement of the weekly shipments of all freights except live stock from Chicago to competing points on the trunk lines—that is, the chief part of the shipments eastward—as reported under the pooling arrangement:

Week ending—	Tons.
March 6.....	54,354
" 13.....	67,413
" 20.....	75,439
" 27.....	87,650

Here again we see that the close approach of the opening of navigation at this port, whence lake shipments are largest and which has been accustomed more than any other place (except Milwaukee) to depend upon the lakes, the shipments have increased steadily as the opening of navigation approached, and in the last week, only one week before vessels began to clear, reached the enormous aggregate of 87,650 tons, which is probably the largest tonnage ever shipped by rail from any American city in a single week, and is more than six weeks' average shipments from New York to the West by the trunk lines in the two years previous to June last. Last year at the same time the opening of navigation was a month instead of a week distant, and the rail rate was about half as high. We have not the figures for the total Chicago shipments then, but judging by the grain shipments, which form the larger part of the freight, they must have been much less in spite of the lower rates.

Reports of the shipments from the other Western cities are not published; but we understand that they have been, in the aggregate, pretty steady from week to week since February, a gradual decrease at St. Louis being more than made up by a gradual increase at Indianapolis, through which pass and to which are credited the local shipments of a great number of railroads crossing Illinois.

When the rate was made 35 cents on grain, on the first of March, there were some complaints that this was not low enough; that, whether it paid or not, shippers had become accustomed to a rate not more than 20, or at most, 25 cents at that time of the year, and that, at any higher rate, they would hold till navigation opened, which by reason of the mild winter was likely to occur unusually early. We see what the result has been. The 35-cent rate was made and maintained, and the roads have had all the traffic they could provide rolling stock for.

The readiness with which freight has moved at this rate just before the opening of navigation gives reason to hope that a remunerative rate may be had also after the opening. Lake rates, it is true, are not so firm as they were; the last vessels chartered accepted a cent a bushel less than the others on cargoes from Chicago to Buffalo, and we believe that a few were left unloaded this week when navigation opened. But there will now be very few vessels offering until the arrival of the fleet that wintered on the lower lakes, and though the lake is open the canal is not, and may not be until some time after the arrival of the first fleet from Chicago. Then there is the enormous stock of wheat in Western elevators which the owners are holding for higher prices which must before long come upon the market for transportation as well as for sale, and which will be likely to cause such a demand as to stiffen lake and canal rates. Altogether, there seems to be a fair prospect that the railroads will get a good share of the grain before harvest at rates which will afford them some profit, which will be a great improvement on their grain business for several past springs and summers.

The satisfactory results secured since November must be ascribed to the coöperation of the railroads, which was made effective with east-bound shipments last winter for the first time. But it will not be safe to conclude that equal results can be effected every year hereafter by this coöperation. Great advantages may be had by it every year, doubtless; how great will depend upon circumstances, which, on the whole, have been favorable since last fall, for there was an enormous accumulation of grain in this country to be moved, an exceptionally great foreign demand, and prices, though not very high for the grain which has formed the chief part of the shipments, were exceptionally so for other grains, and for that higher than usual for some years. It is easy to understand that with good crops abroad, lessening the foreign demand, a large supply here, and very low prices in consequence, the railroads could get very little grain while navigation was open, at prices that would pay much more than expenses, and in winter little more than the amount needed to supply the demand for domestic consumption. This being the case, it is the more important that they should get a profit on this traffic when they can, and on last summer's crops they can—at least they have been able to so far.

Shareholders and Leases.

The Sioux City & Dakota Railroad is not to go to the Chicago, Milwaukee & St. Paul without a struggle. Mr. John I. Blair and two other directors representing his interest in the road charge that the lease was made by stealth, as it were. They met at Yankton, March 27, just one week after the board meeting which agreed to lease the road. These gentlemen passed a series of formal resolutions, in which they say that they own 7,760 out of 15,000 shares of the Sioux City & Dakota Railroad; that President C. G. Wicker when he called the board meeting at which the lease was made not only did not give any notice of the nature of the business to be transacted, but actually informed these three directors, who owned a majority of the stock, that no important action was to be taken, but that the meeting was to be merely formal, to comply with certain requirements of the laws of Dakota. Instead of this, the directors issued on the spot \$176,000 bonds on the extension from Beloit to Sioux Falls, and an equal amount of stock, sold them immediately to the Chicago, Milwaukee & St. Paul or its representative, at 90 for the bonds and 25 for the stock; and executed a lease of the road to that company for five years at a rental equal to 40 per cent. of its gross earnings. Now these three directors (John I. Blair, D. C. Blair and Walter C. Larned) declare that the issue of these bonds and shares was never authorized by the stockholders and is therefore void.

If the facts are as stated, the lease was certainly an outrage, but it is not so certain that it is illegal and void; that depends upon the charter of the company and the laws of the territory of Dakota, under which, we believe, it is organized. It may seem unreasonable that a junior partner, as it were, holding a minority interest in a business, should have authority to sell out the business without consulting his principal who holds the majority interest. But some corporations are given very extensive powers, and when once the shareholders have cast their votes for directors, they have done about all they can until the time comes for another election, by which time their directors may have permanently disposed of the business of the corporation; and these directors may have owned but one share apiece of the stock, while all the other shareholders, holding hundreds of times as many shares, may disapprove. And what the board may do, any meeting at which a quorum is present may do; at the Sioux City & Dakota meeting when the lease was made, only four directors were present, of a board of seven, all the others being opposed to the lease.

We do not mean to say that directors and bare quorums of directors generally have such unrestricted powers, but there are such cases, especially in states where there is little or no capital to invest, and the part taken by residents is chiefly that of projectors and contractors. There laws and charters are likely to take little heed of the rights of investors and give almost unlimited powers to incorporators and directors. Certainly it is often desirable that a board should be able to act promptly and decisively, but there should be some limit to its powers, especially when its members are not required to be qualified by the ownership of a large amount of stock. It is true that the stockholders must expect to entrust the management of their property pretty completely to their board for the year for which they are elected, but when these directors, without consulting the stockholders, lease the property, they virtually usurp the management of it for the whole term of the lease. They must give place to their successors, it is true, at the expiration of their term, but then they leave these successors nothing to do. Whatever the power that a board may have, in justice to the interests of those for whom it acts as trustees, it should give the stockholders an opportunity to examine and express their opinions upon a matter so important as the lease of their property; and this is a right which should be secured to stockholders by law. Usually there is an advantage in having such steps openly discussed. If any one loses for want of secrecy, it is the lessee rather than the lessor; for when it is known that negotiations are pending, the latter is likely to have the benefit of competition, if any exists. But whatever may be the objections to publicity under existing circumstances, they disappear mainly when all corporations alike are subject to the rule.

There has been nothing to show that the lease of the Sioux City & Dakota road was not advantageous to its proprietors, except this protest, and it will very likely be found that the claim of these three directors to represent a majority of the stock is contested. But the complaint gives occasion to call attention to the summary manner in which the permanent interests of the proprietors of a railroad often are disposed of with

the slightest possible consultation of them or attention to their wishes. In this case, however, whether the lease is a proper one or not, it does not dispose permanently of the property, as it is for the exceptionally short term of five years.

A Texas Railroad Project.

A rival of the Houston & Texas Central Railroad is said to be planned in the interest of the Missouri, Kansas & Texas, whose southern terminus is now the northern terminus of the Texas Central, and now interchanges a good deal of traffic with it, the latter having a heavier business than any other Texas road. The new scheme seems likely enough to be carried into execution, as it requires only the extension of two roads that have already made considerable progress. One of these is the Gulf, Colorado & Santa Fe, which has not made much noise as yet, as the part completed before the last crop is in a very thinly peopled and unproductive country, and it has not yet become a carrier of much importance; but the route of this road is almost parallel with that of the Galveston, Houston & Henderson and the Houston & Texas Central, and not very far to the west of it, but generally 20 miles or more west of the Brazos River, while the main line of the Houston & Texas Central is east of it. This road is now completed to the Austin Branch of the Texas Central at Brenham, and is in progress further northwest to Belton, which is nearly half way to the northern border, and about 50 miles west of the Texas Central at Bremond. To complete the line it is proposed that the Missouri, Kansas & Texas should construct a line from Gainesville, the present terminus of its "Pacific Division" (late Denison & Pacific), which is 35 miles west of the Texas Central at Sherman, nearly due south some 175 miles to Belton. This would seem in many respects a rational line to make, as there is a fertile, well peopled and growing country on its whole length, and there is no railroad whatever to the west of it. But to the east the Sherman-Fort Worth line, which is to connect the Transcontinental Division with the main line of the Texas & Pacific, would be uncomfortably near the north 60 miles of the road, and on the assumption that the Texas & Pacific and the Missouri, Kansas & Texas are to be friendly allies hereafter, on account of the strong Gould influence in each, it would seem better to use the Sherman-Fort Worth line and not build from Gainesville to Fort Worth. Then further south the Texas Central has done something toward occupying the ground, and is still extending its Waco line up the Brazos Valley, which the proposed line would cross. There is some reason to suspect, however, that the project is designed partly for effect on this very Houston & Texas Central road. There have been signs that the Gould interest has desired to secure this very important line in the interest of the Missouri, Kansas & Texas, by a lease or otherwise, and that it has not succeeded. The probability of having a rival parallel line to the west, which it would be the interest of its sole northern connection to favor, and which, though too distant to affect greatly its local traffic except on the branches which it crossed, would still be a formidable barrier to a system of western branches, might bring the Texas Central to terms which, under the present circumstances it does not feel justified in accepting. There is, however, another and probably much more serious obstacle to a lease of this road. It is now controlled by Morgan's Louisiana & Texas Railroad, which owns a majority of the shares, and will be the sole rail outlet from the southern terminus of the Texas Central to New Orleans. It is to the interest of the present administration to have the current of traffic, so far as possible, to the south and to New Orleans; the Missouri, Kansas & Texas would prefer to have it go north and to St. Louis or Chicago. It would probably be a considerable loss to the Morgan road, and also to the Morgan steamship interest, which carries a very large proportion of the Texas traffic by way of Gulf ports, to have the Houston & Texas Central worked in the interest of the Missouri, Kansas & Texas, and it might very likely insist that if the latter takes one of its roads it must take them both, in which case it could afford to be neutral as to the direction of traffic, which would be better for all parties concerned, and especially for the community. But if the new plan is carried out, it will be distinctly to the disadvantage of Galveston, except that it will by it secure a competing line to the North. The Gulf, Colorado & Santa Fe was designed especially as a feeder to Galveston; if completed according to the original plan it will have none but an indirect connection with a road to the north, but will be extended to the northwest and be compelled to carry the products of the country on its long line to Galveston or (with less advantage to itself) on the way to Houston, which the completion of the railroad to New Orleans is likely to make more than ever the commercial centre of Texas. If it should be worked by the Missouri, Kansas & Texas, the company's interest would be that the country on its line should ship its cotton to and procure its supplies from St. Louis or some other northern market. The extent to which a railroad can determine the course of traffic, however, is greatly exaggerated by public opinion. It can do something, in certain situations a good deal, but generally it has to carry the traffic where it wants to go. The Chicago & Northwestern has to carry to Milwaukee at the same rate as to Chicago from many of its stations, though frequently at greater expense; the Chicago & Alton carries to St. Louis or Chicago indifferently; the New York Central to New York or Boston; the Pennsylvania to Baltimore, Philadelphia or New York, though it makes greater profits when the traffic goes no

further than Philadelphia. So in any hands a north-and-south railroad in Texas will doubtless carry cotton both north and south: from Houston to Sherman and from Sherman to Houston. But a line from New Orleans to Sherman will be led to make such rates as will enable the New Orleans market to compete with the St. Louis or other northern market; and a St. Louis-Houston line will try to make rates to enable St. Louis to compete with New Orleans in Houston.

Through Export Rates.

Through export rates have caused more difficulty the past winter than any other feature in freight business. East-bound, as well as west-bound rates, to the seaboard, with slight exceptions, have been firmly maintained, but export rates have been generally lower by some of the ports than by others—notably by way of Portland. It was long ago agreed by the trunk lines that, as a general principle, rates by rail and steamer from the West to Liverpool ought to be the same by way of all the ports, and there can be little doubt that, whatever the agreement, they must be, on the whole and in the long run, substantially equal; for otherwise, the port by which the cost of export is least will get all the traffic. But only the New York roads seem to favor the strict enforcement of such a rule. The Grand Trunk has a contract with a steamer line to supply one cargo a week at Portland for six months of the year, and if it cannot get enough from local points on its own lines or from competing points at full rates, it claims the right, and exercises it, of making whatever rates may be necessary to attract freight enough to make out the cargo. Then for a considerable country on its lines (in which, however, there can be few competing points except with the Great Western), Montreal is about 200 miles nearer than New York (which also may be said of Cincinnati in respect to Baltimore). The Baltimore & Ohio now claims that the agreement of the trunk-line presidents in 1877 virtually prohibits such equal export rates, as it expressly declares that the full rail rates, which must be two cents lower to Philadelphia and three cents lower to Baltimore than to New York, shall be collected on all shipments to and from those ports, whether of export or other freight. Considering this conflict of the trunk lines themselves, the protests of the boards of trade of Chicago and Indianapolis and of the St. Louis Merchants Exchange would seem to be superfluous. But these protests certainly must have been based upon an erroneous idea of what is contemplated by uniform export rates. Instead of advancing export rates, it would be more likely to reduce them, for in fixing the export rate the committee or other body intrusted with the task would have to make it equal to the sum of the rail rate and the steamer rate by whatever port the steamer rate of the day would give the lowest through rate; otherwise the freight would tend to go locally to the port where favorable steamer rates would make it cost less to reship at the seaboard than to bill through. The railroads want an equal chance to secure export freight, and they can have this only by all offering substantially uniform rates. With the differences as they now are, if Baltimore steamers offer rates a penny a bushel less than New York steamers, the traffic at that time all tends to Baltimore, and only those who can ship by way of Baltimore get the benefit of the reduction; but with a uniform tariff, a reduction of a penny would be made the same day on exports by way of Boston and New York. The difficulties in the way of carrying out a scheme of uniform export rates are, however, very great. Probably in some cases there are objections to a route which will have to be considered in making the rate by that route, just as is the case with some rail routes. No place which has steamers lines will, we may be sure, give up its export trade altogether simply because it cannot get any at rates as high as are charged from other ports. So long as any money is to be made from the business, it will be continued, just as is the case with competitive rail business. The steamers may be regarded simply as extensions of the railroads. They will have to get about the same profits from all ports, as they are free to go from one to another, but it does not make any difference to them whether their profit comes directly from the freight or from a connecting railroad company.

The amount of freight billed through from the West to Europe and from Europe to the West is but a small proportion of the whole, it is true, but it is already considerable in amount, and it increases steadily. The exports from the city of Chicago were nearly seven times as great in 1879 as in 1874, and for the past three years have been 309,000, 602,000 and 768,000 tons, respectively. The imports, judging from the amount of duties collected, have not grown nearly so fast, the amounts being nearly the same in 1876, 1877, and 1878, and less than in 1875, and only in 1879 showing an increase. But the whole tendency of business is toward the increase of traffic of this kind, which eliminates as far as possible the services of merchants and warehousemen, and connects the consumer and producer as directly as possible. On this account, it is desirable to reach some settled policy concerning the business, as otherwise it may disturb all the through traffic.

Foreign Railroad Notes.

The Prussian Minister of Public Works seems disposed to give special attention to the construction of canals. It has recently printed reports by Baron von Weber on the canal systems of England and Sweden, and is now about to send officers to inspect the canals of North America and France. It is reported that Director Weishaupt, one of the most eminent of Prussian railroad men, will be intrusted with the mission

to the United States, and will start immediately—which he should do if he would see the Erie Canal at a time when work is done on its bed—and that possibly Baron von Weber will be sent to France. It is also rumored that some one will be sent to this country to study the economical side of our railroad management with something of the thoroughness that Mr. Bartels has given to the technical side. If so, traffic managers may expect to be called upon to tell all they know. We predict that the German expert will be simply astounded at some of the things he learns.

One of the leading Prussian railroads (the Berlin & Anhalt) is having dining cars—very appropriately called “restaurant cars”—built to run with express trains between Berlin and Frankfurt. There are to be two cars, one to serve as kitchen and larder and the other as dining-room. The latter will be arranged like an American car, with entrances at the ends and a central passage. On one side the seats are wide enough for two, and on the other for one, as on some narrow-gauge cars built in this country. Passengers will ride in them only while eating, and as there is no communication between European cars, they must get in and out when stops are made at stations. The restaurant car will also keep on hand fresh milk for children, and ices and similar refreshments. The management of these cars will probably be placed in the hands of the sleeping-car company which has cars on this road, which will provide it with waiters speaking several languages.

Prime Minister von Pfretzschner, of Bavaria, has recently resigned, ostensibly on account of his health, but it is whispered that other causes prevailed. Nine years ago Von Pfretzschner carried out the policy of the absorption of all the Bavarian railroads by the government. Now it is said his position as Minister of Railways became in a high degree uncomfortable after the deficit in the railroad budget came to light, increased visibly, and was criticised and found fault with in Parliament. Evidently the state system adds to the cares and dangers of statesmen, as well as to their power.

The government of Roumania has bought the railroads of that country, which were all (there are very few of them) owned by one company, originally of Vienna but recently of Berlin.

“Freight lines” are as common on the continent of Europe, apparently, as in this country. There they are often international. Recently meetings were held of the Upper Italian, the Austrian Southern and the Bavarian State railroads to provide for one, and another is mentioned to provide for traffic between Italy, Belgium, Holland and England by way of the Brenner Pass.

The government of Italy has, after years of effort, gained possession of nearly all the railroads in the kingdom; and now the administration presents to Parliament a proposition to rent these roads to five great companies, making something like the French system—a recognized monopoly under state supervision, but worked by private corporations. Something like this happened in Austria many years ago, when the government sold its railroads to companies of French investors. Austria sold because it needed the money very badly.

The members of a commission appointed by the Italian Ministers of Public Works and of Agriculture, Industry and Trade to examine railroad freight tariffs and especially the rates on agricultural products, and to submit propositions for the making of new tariffs consist of the proper officers of the two ministries, a few experts and a representative of each of the three great Italian railroad administrations.

The Society of Mechanical Engineers.

In another part of the paper a brief report of the organization of this Society will be found. There is only time to write a very few words of comment thereon before going to press.

It will be seen that, practically, admission into the Society is limited to engineers who “in the opinion of the Council are competent to take charge of work in his department either as a designer or constructor, or else have been connected with the same as a teacher.” This seems like a dangerous power and a weighty responsibility to place in the hands of such a body of men, and possibly some persons will hesitate about submitting their reputations to the decree of any Council that it may be possible to elect. An application for membership from some persons eminent in the profession would present an almost ludicrous aspect, if we imagine them applying for admission and asking, in effect, what they must ask if they do apply: “Will you, gentlemen of the Council, be good enough to say whether I am competent to take charge of work as a designer or constructor?”

The objection to this article, as adopted, is, as pointed out last week, that it virtually makes the Council the judges of the professional ability of the candidates for membership. It seems doubtful, then, whether a position as a member of this body will be a bed of roses, or whether the effect of this article, as adopted, will invite those whom it is desirable to have in this Society to apply for admission.

As will be seen from the list of names of those who were present at the meeting at the Stevens Institute, the new Society starts out with a good crew to man the ship. The choice of officers is, as far as we have the means of knowing, an excellent one, and probably the new organization will be a very sea-worthy structure, and even with what seems like a defect in its framework, it may make many long and prosperous voyages.

The attending circumstances of the launch were especially propitious, and those who were present will not soon forget the bounty and general cheeriness of the lunch provided by

President Morton in his beautiful home adjoining the Institute buildings.

The future meeting of the Society will be announced by the Council.

Record of New Railroad Construction.

This number of the *Railroad Gazette* contains information of the laying of track on new railroads as follows:

Quincy, Missouri & Pacific.—Extended from Novinger, Mo., westward to Greencastle, 12 miles.

Little Rock, Mississippi River & Texas.—The *Rob Roy Branch* of this road is completed from Pine Bluff, Ark., east by north to Micawber, 10 miles.

Burlington & Missouri River in Nebraska.—The *Republican Valley Branch* has been extended from Republican, Neb., westward to Orleans 11½ miles.

Kansas City, Lawrence & Southern.—This company's *Southern Kansas line* is extended from near Winfield, Kan., westward to Wellington, 25 miles.

Wilmington & Northern.—The *French Creek Branch* is extended from St. Mary, Pa., eastward to the Falls of French Creek, 8 miles.

Utah Southern Extension.—Extended from Desert, Utah, southwest to Black Rock Springs, 30 miles.

This is a total of 91½ miles of new railroad, making 887 miles thus far this year, against 317 miles reported for the corresponding period in 1879, 242 in 1878, and 190 in 1877.

ELEVATED RAILROAD SECURITIES, whose prices were pretty well maintained during the time when it seemed probable that the profits of the roads would be greatly reduced by the passage of an act reducing the fares on the road to five cents (the average heretofore having been about 7½), fell very rapidly last week. There are three classes of stocks and two of bonds. The New York Elevated, which owns a line on the west side of the city from the Battery to Fifty-ninth street, five miles, which has a light traffic, and one on the east side of the city from the Battery to Harlem, 8½ miles, which has a heavier traffic than any other line in the city, has issued 7 per cent. first-mortgage bonds and stock; the Metropolitan Elevated, which has a line from near the Battery up the west side of the city to 155th street, 10½ miles, on half of which the traffic is very heavy and on the other half very light, and a line on the east side of the city from Chatham square to Harlem, about 7½ miles, with light traffic, has issued stock and 6 per cent. first-mortgage bonds. The Manhattan Company, which has leased both roads, but owns no property, has issued its own stock and contracted to pay the interest on the bonds and 10 per cent. dividends on the stocks of both the other companies. The dividends on the Manhattan stock would have to come, of course, from the excess of profits over the sum needed to pay the interest and dividends of the other securities. Yet at one time this stock brought more than 60 on the New York Stock Exchange.

A 10 per cent. “guaranteed” stock is a good thing to have, and though in this case the guarantee amounted to little more than the assurance that a surplus of profits of one of the roads would be applicable to meet any possible deficit of the other, yet the word itself counts for something, and the higher price paid for Manhattan stock and the large profits of those parts of the road in operation when the lease was made led many investors to look upon the shares as good beyond peradventure to pay the 10 per cent. guaranteed. The fact seems to have been overlooked that half of the west-side line of the Metropolitan (much of which was not then opened for traffic) was through a territory not yet built up, and that the whole of its east-side line was in the next street to the other company's east-side line, and could get hardly any traffic which it would not take from that line. Thus, at the time of the Manhattan lease, there were about 18½ miles in operation, including all the lines that have a heavy traffic, or can be expected to have for many years, and the fact that the profits of these were sufficient to provide abundantly for the stocks and bonds issued on that mileage did not by any means justify the expectation, that when 12½ miles of new road with very thin traffic had been opened the profits would increase in proportion to the increase of mileage. Yet this seems to have been what many investors have done. It is now reported that the Metropolitan Company's lines, now that a large part of the Second Avenue road has been opened, do not earn the dividends which the Manhattan Company has guaranteed, and if the other lines do not meet the deficiency, it would seem that the Manhattan Company, having no other income, must fail to pay the rental, in which case the roads will revert to the owners, that is, the lesser companies. But it must be said that there are no sufficient recent returns of the operations of the roads to enable one to know what their profits are; all opinions and the fluctuations of the stock are based on vague reports and the significant acts of large holders who are supposed to know.

THE CHICAGO BOARD OF TRADE REPORT for 1879 contains some remarks on the transportation question, and especially the effect of the policy of railroad cooperation, which deserve attention, not only as coming from the largest body of shippers in the country, but for the reasonableness of its utterances. The report recognizes the desirableness of the uniformity and greater regularity of the rates to be secured by such cooperation, and seems inclined to favor it if the tendency under it is not to make rates unreasonably high. Unfortunately, the conduct of the railroads for some years past has led Western shippers to cherish extraordinary ideas as to what are reasonable through rates.

They select the lowest rates accepted in the heat of a desperate railroad war—rates that very likely were below the bare cost of transportation—and question the reasonableness of anything higher. In this very report it is said that if the rates of 15 and 20 cents per 100 lbs. prevailing for some months last year were reasonable, then the 40-cent rate of last winter must have been too high. This does not follow, however; and no one who has any knowledge of the cost of railroad transportation can say that the low rates of last year were reasonable. It may very well be that the roads would have lost more by laying up their cars and engines and dismissing their train-men, than by keeping them running at a 15-cent rate; just as a truckman might lose more by refusing jobs at two dollars a day, when his expenses are four, than by accepting them when he cannot get more, because his expenses for stable-rent, horse-feed, and his own maintenance go right on, whether he works or not.

We publish the selection from the report of Mr. Randolph, Secretary of the Chicago Board, and with it one from the report of the Secretary of the Indianapolis Board of Trade, which is of a very different character. The latter inveighs especially against discriminations, but at the same time he condemns utterly the cooperation by which alone has it ever been found possible to prevent such discriminations, though without presenting any facts or arguments on which to base his condemnation; he urges legislation to keep the railroads in check, but is unable to suggest what it should be; but he makes some commendatory references to the English laws. His statements concerning these laws, however, misrepresent them woefully. It is, by the way, very common in this country for the powers of the British Railway Commission to be grossly exaggerated.

Board of trade reports ought to be made to represent pretty fairly the opinions of the mercantile community with regard to transportation questions. It is, however, not easy to make them do so, because each is usually prepared by a single employé of the board, without much supervision by the members who have the direct interest in the matter. In Germany the reports of the chambers of commerce have a very decided influence on railroad policy, tariffs and railroad legislation. There, however, these bodies have something of an official character, and the business men being accustomed to have trade questions discussed by them make some effort to influence their expressions.

THE PANAMA RAILROAD has issued a report for the year 1879, much fuller than any previous report that we have seen, and containing some information about traffic which, at this time of talk about an isthmus canal, should be especially valuable, and is interesting at any time.

This railroad is 47½ miles long. Its gross earnings in 1879 were \$2,156,367, or about \$45,400 per mile; which is about a quarter less than the earnings per mile on the Pennsylvania Railroad between Philadelphia and Pittsburgh. Only \$1,706,761 of these earnings, however, were directly from railroad traffic, which is at the rate of \$36,000 per mile. Only about one-twelfth of these earnings was from passengers, and nearly nine-tenths from freight.

What is remarkable is that these large earnings should be made from so small a traffic. The whole number of passengers carried was 23,729; of tons of freight, 161,743. Doubtless nearly all these were carried through from ocean to ocean, the local traffic on this road being almost nothing. But on this assumption, even, which is the most favorable possible, the traffic amounted to but 1,127,128 passenger-miles and 7,682,790 ton-miles—the latter equal to only about one day's traffic on the thousand miles of the New York Central Railroad. The Panama Railroad traffic is equivalent to 33 passengers and 224 tons of freight carried each way daily over the road—that is, a car less than two-thirds full of passengers and 22 car-loads of freight—both together making a rather light train. The large profits of the road, therefore, evidently do not come from a large traffic. Further examination shows that they come from high rates. The average receipt for passengers in 1879 was about \$6, or 12½ cents per mile, and the average freight receipt \$9.47 per ton (for 47½ miles haul) or 20 cents per ton per mile. At the latter rate the New York Central's freight business last year would have brought in more than \$450,000,000! The working expenses, however, appear to be high as well as the rates; the proportion of working expenses to earnings from traffic being 33.8 per cent., which applied to freight and passengers alike makes the cost 4.2 cents per passenger-mile and 6½ cents per ton-mile. Of course, there are reasons why this road is costly to work, but the chief cause of the large cost per unit of traffic is the small amount of traffic. Only 16 per cent. of the freight in 1879 was California traffic, consisting of 13,210 tons shipped from New York to San Francisco, and 17,524 tons shipped from San Francisco to New York. It may be remarked that on the Pacific railroads the excess of through shipments is in the other direction. The freight traffic grows, and last year was 42 per cent. greater than in 1876 and 6 per cent. greater than in 1878.

The capital of this road consists of \$7,000,000 of stock and \$3,878,800 of 7 per cent. gold bonds—at the rate of \$229,000 per mile—a large amount, truly, but exceeded by the New York, Pennsylvania & Ohio (late Atlantic & Great Western) and the New York, Lake Erie & Western in this country. The Panama, however, pays dividends on its stock, and fat ones at that—last year no less than 13 per cent., and for many years previously 12 per cent.

THE CHICAGO & WESTERN INDIANA RAILROAD, which is a short line of 16 miles built to give the Wabash, St. Louis & Pacific and the Chicago & Eastern Illinois an entrance into Chicago, has met with an extraordinary

obstacle just as it had completed all but a few hundred feet of its track. The route of this road for some miles is within the city of Chicago, and to secure it without condemnation and without the publicity which would have been sure to greatly exaggerate the claims of the owners of the hundreds of little parcels on the route, the company bought secretly at private sale nearly every lot it needed before it was known that a railroad was to be built there. Authority was obtained from the Council to construct the road, and it was built nearly complete, but was interrupted by the opposition of some owners of abutting property, and by that of some railroads whose tracks it would cross. These brought suit, and the Court last week decided that the ordinance passed by the Common Council authorizing the construction of the road was void, because it did not more precisely define the route of the road. The company thus has its road, which inside of the city limits is said to have cost more than a million, but has no right to use it. If meanwhile a new Council had been chosen, opposed to admitting the road, the company would be in a bad way, but as the Council passed the original ordinance over the Mayor's veto, it will probably not hesitate to pass an amended ordinance; though when the matter was brought up in committee a good deal of opposition was manifested, doubtless by owners of adjoining property. The route for most of the way in the city is close alongside that of the Lake Shore & Michigan Southern and the Chicago, Rock Island & Pacific. The obstacle may delay the opening of the road for several weeks, and the Wabash, St. Louis & Pacific, which expected to begin running trains into Chicago by the 1st of May at latest, does not now expect to get in there until a month or two later, and it was partly on that account, we believe, that no provision was made for it when the arbitrators made a new apportionment of traffic among roads in the "Chicago Division" of Southwestern Railway Association last week. This was done with its express approval; when it is ready to carry to Chicago it will ask for its share and there will probably be a new arbitration.

THE SOUTHWESTERN ASSOCIATION seems to come up as strong as ever after every difficulty which threatens dissolution, though sometimes with intermissions so long as to lessen greatly its usefulness. There was an interval of war for about five months last year, and one about as long the year before; but this year it is gratifying to see that the troubles, which at one time seemed as formidable as any that have threatened it, were healed without an open breach and the Association apparently made stronger than ever. The reestablishment of the Association we noted some weeks ago, and also the award of the arbitrators to the roads in the St. Louis Division. This latter gave such dissatisfaction to two of the roads that they have demanded a new arbitration, as provided for by the agreement. Last week there was a new arbitration of the shares of the Chicago Division, which is understood to give satisfaction. The percentages awarded have not been made public, but those existing before the new award were published for the first time, so far as we know. They are a matter of history now, and as such we record them:

Chicago, Burlington & Quincy via Hopkins	20.98 per cent.
" Hannibal	28.38 "
Chicago, Rock Island & Pacific	22.26 "
Chicago & Alton	28.38 "

The Rock Island claimed more because of its new connection with Kansas City. The Burlington road, it seems, has had nearly half of the whole amount.

The new award is not likely to last more than two months at most, as by that time the Wabash will be in Chicago and will have to be given a share of the business.

LAKE NAVIGATION is open. Some craft passed through the Straits of Mackinaw, Saturday, the 3d, and the same day some vessels cleared from Chicago for Buffalo, more following Sunday, although there was not then any definite information as to the condition of the Straits. The Straits have been open earlier but once for 27 years, and that was in 1878. The opening of navigation, however, was practically April 1 that year, as the insurance companies will not insure earlier. With that exception April 20 has been the earliest date of opening since 1871. The season this year will thus be three or four weeks earlier than usual, which will give a material addition to the amount of transportation which the lake marine will be able to perform this season, and increase correspondingly their competition with the railroads. Rates so far are reported the same as for two or three weeks past—6 cents per bushel for corn and 6½ for wheat from Chicago or Milwaukee to Buffalo, and 13 cents for corn by lake and canal through to New York. The opening lake rate last year was two cents lower.

NEW PUBLICATIONS.

The first numbers of several new periodicals have been received, some of which have deserved an earlier notice. Among these are *The American Engineer*, a monthly illustrated publication, the pages of which are nearly the same size as those of the *Railroad Gazette*. Each number contains sixteen pages of reading matter stitched in blue covers. Its mechanical make-up is excellent. It is printed on tinted, calendered paper of very good quality. The reading matter is partly original and a portion copied from other sources. The two last numbers contain biographical sketches of prominent engineers, with portraits which certainly do not flatter the originals.

The field which this paper has occupied is a very extensive one, and it seems surprising that the demand for a really good paper devoted entirely to engineering has not been supplied in this country before. The *American Engineer* is

published by Smith & Cowles, at No. 182 Dearborn street, Chicago. Mr. Willard A. Smith, the proprietor of the *Railway Review*, being the Managing Editor.

The Railway Engineer, "a Monthly Review, Theoretical and Practical," comes from the other side of the water. It is published at No. 12 Crane Court, Fleet street, London, E. C. No names of either publishers or editors are given. The size of its pages are 12½ × 9¼ in., the number for March containing 32 of them. Besides these pages there are four large folded lithographic plates, which are folded in and pasted in the back end. These are made from excellent drawings, but, it must be confessed, are rather unwieldy. The publisher or editor has evidently not yet learned the art of economizing space and of adjusting the scale of his engravings to the subject represented. The lithographs, though, are very good, but must be carefully handled to avoid tearing in using them. The whole periodical is printed in large type, on heavy paper, and in the excellent manner so characteristic of most English work of this kind. In form, and apparently in matter, it follows the pattern of a French monthly and a German bi-monthly devoted to railroad engineering.

The March number contains articles on "The Half-Yearly Oracles," meaning the half-yearly reports of British Railroads, "Express Engines on the Great Eastern Railway," "Train Accidents in America During the Year 1879," which is an abstract of our yearly review, "The New Automatic Vacuum Brake," "Electric Signals," "Official Reports on Recent Accidents," "Bills in Parliament," "Lubricants," "The St. Gothard Tunnel," "Correspondence and Notes."

The plates are a longitudinal section and plan of a Great Eastern express engine, 28½ × 22 in.; another one of the details of a new automatic vacuum brake, which are represented to an unnecessarily large scale. There are three smaller folded plates, one representing the brake referred to and the two others details of the express engine.

Altogether, this new publication looks very promising, and if its present standard is maintained, it will be one of the periodicals which no railroad engineer who expects to keep abreast of the times can afford to be without.

The first number of *The Coach Painter*, Chas. B. Sherron, Newark, N. J., Post-Office Drawer G, editor and manager, is also at hand. It is to be a monthly journal, with sixteen pages, 11½ × 9¼ in., well printed on fair paper and large type, and with illustrations scattered all through. The articles have such titles as would attract the attention of practical painters, and doubtless this newest comer will have a useful place to fill.

General Railroad News.

MEETINGS AND ANNOUNCEMENTS.

Meetings.

Meetings will be held as follows:

Delaware & Hudson Canal, annual meeting, at the office in New York, May 11, at noon. Transfer books will close April 17.

Ogdensburg & Lake Champlain, special meeting, in Ogdensburg, N. Y., May 4, to vote on authorizing a new consolidated mortgage.

Dividends.

Dividends have been declared as follows:

Nashua & Rochester (leased to Worcester & Nashua), 1½ per cent., semi-annual, payable April 1.

Sioux City & Pacific, 3½ per cent., semi-annual, on preferred stock, payable April 1.

Topeka Equipment Co., 5 per cent., semi-annual, payable April 1.

National Car Co., 2½ per cent., quarterly, payable April 1.

Vermont & Massachusetts (leased to Fitchburg), 3 per cent., semi-annual, payable April 7.

Chicago, Burlington & Quincy, extra dividend of 1½ per cent. in cash and 20 per cent in new stock, payable May 8. Transfer books close April 10.

Panama, 4 per cent., quarterly, payable May 1.

Foreclosure Sales.

The *New York, Housatonic & Northern* road, after many postponements, was sold in White Plains, N. Y., April 3, under a decree of foreclosure of the mortgage for \$2,500,000, granted by the New York Supreme Court. There are only 5½ miles of finished road, from Brookfield Junction, Conn., to Danbury, and that is worked by the Housatonic Company. There are also some 25 miles of graded road-bed, from Brookfield Junction eastward into Westchester County, N. Y. The property was bought for \$111,000 by Dwight Studwell, Attorney for Horace Bridgeman, of New York. It is said that he intends to complete the road from Danbury to the Harlem River, as originally proposed.

The *Sheboygan & Fond du Lac* road was sold in Fond du Lac, Wis., April 3, under foreclosure of mortgage, and bought for \$1,500,000 by Albert Keep and M. L. Sykes, Jr., for account of the Chicago & Northwestern Company. That company has owned a controlling interest for some time, and now acquires full title. The bonded debt is \$750,000 first mortgage, and \$850,000 extension bonds; no interest has been paid since 1873. The road is 78.4 miles long, from Sheboygan, Wis., by Fond du Lac to Princeton. It is possible that the Northwestern will extend it from Princeton to Tomah, or Elroy, about 60 miles, which would give it a line through from the Mississippi to Milwaukee.

The *Bellaire & St. Clairsville* road was sold March 20 by the Receiver, under foreclosure of mortgage, and bought for \$18,500 for account of the Riverside Iron Company, of Wheeling, W. Va., which held all or nearly all the bonds. The road is of 3 feet gauge and 6½ miles long, from the Baltimore & Ohio at Quincy, O., northward to St. Clairsville.

The *Selma, Rome & Dalton* road is to be sold in Selma, Ala., June 14, under the decree of foreclosure lately granted. The sale will include the section from Selma to the Georgia line, 171 miles, and will be made subject to the lien of \$600,000 prior mortgage bonds. There are over \$3,000,000 bonds outstanding, besides the prior lien bonds.

Engineers' Club of Philadelphia.

At the regular meeting in Philadelphia, April 3, Vice-President Roberts in the chair, Mr. Rudolph Hering exhibited the original drawings of the United States Coast Survey map of the Delaware River from Bridesburg to Fort

Mifflin, and read extracts from the report of Mr. H. Mitchell, of the Coast Survey.

Mr. A. E. Lehman submitted a lithographic topographical map of the middle section of the South Mountain range in Pennsylvania, and gave figures showing the labor necessary to make surveys of this kind. In an area of eighty-three square miles 334 linear miles of survey were required, being 4.02 miles to each square mile of topography, and a total distance to be walked of 1,337 miles. The levels were all run by vertical angles. Circuits of over twenty-five miles were made, which closed within one and a half feet. The longest circuit, thirty-five miles, closed within sixty feet. One circuit of ninety-five miles, since run, closed within 2.3 feet, which great accuracy was, however, probably due to eliminating the errors throughout the line. The geological formation is azoic, principally quartzite and porphyritic rocks, chlorite schist and epidote. Rich deposits of magnetic and hematite iron ore are the economical features of that district. The region is thickly wooded with dense laurel and other brush, greatly retarding the work and requiring the services of the axeman on half the line.

Mr. Howard Murphy exhibited a finely-preserved volume of Robert Fulton's "Treatise on Canals," being the copy presented by the author, in an autograph letter, to General Washington, whose autograph is also on the title page. This valuable relic is the property of Mr. Samuel L. Smedley, a member of the club.

Mr. A. R. Roberts described a model of a self-adjusting crossing frog, made for the Philadelphia & Reading Railroad Company, noticing the objections to the ordinary frog, and the manner in which they had been overcome.

Mr. Arthur W. Sheaffer exhibited a diagram prepared by P. W. Sheaffer, Esq., of Pottsville, showing the progress of the anthracite coal trade, and the relation of the amount of coal shipped to market to the coal area, showing that for every ton mined three tons are wasted.

Mr. Freeland illustrated some mathematical formulae.

A diagram of the old Centre Square Water-Works of Philadelphia, prepared by Mr. Frederick Graff, C. E., President of the club, was presented to the club by him.

March Joint Executive Committee Meeting.

Hitherto the proceedings of the meetings of the Joint Executive Committee have been given out for publication, and we have usually published them in full, or nearly so. Hereafter the reports will be sent only to the companies which are members of the Committee.

The meeting held in New York March 24 and 25 was attended by the representatives of all but seven of the companies belonging. The Chicago & Grand Trunk and the New York & New England were admitted as members. Officers from seven roads not belonging to the Committee were present during the session.

The chief questions proposed for the consideration of the meeting were some changes and additions to the classification of freights, and the relations of the Grand Trunk to the other members of the committee. There were besides several questions of more local interest, including the settlement of some difficulties concerning the Peoria apportionment, the equalization of cartage at Chicago, Cleveland and Lansing, the division of rates from Davenport, the restoration of elevator charges at the seaboard, and certain irregularities in the differences in rates on first and second-class freight between New York and Boston at different Western points.

It is said that a good deal of time was given to the discussion of the Grand Trunk's position, and the circumstances which make it unwillingly to agree that the export rates shall be the same from the West to Liverpool by all routes. Mr. Seargeant represented the Grand Trunk and defended its position. The question of foreign through rates in both directions was finally referred to the Trunk Line Executive Committee and the Grand Trunk for definite action, and to them were referred also protests received from commercial bodies of Chicago, St. Louis and Indianapolis against a proposed plan for equalizing export rates. Charges made by the National Dispatch against certain companies for cutting rates were referred to a special committee.

A resolution was passed prohibiting the carrying of east-bound freights at estimated weights known to be less than the actual weights.

Certain additions and changes in the classification of freights proposed by the Committee on Classification were adopted, to take effect April 1. Among them was a modification of a rule regarding lumber rates, which is made to read that when lumber, shooks and cooperage stock are loaded in cars less than 33 feet long, the minimum weight of a car-load will be 20,000 lbs.; when in cars 33 feet long, it will be 24,000 lbs., and the charges will be for actual weight when more than the minimum weight is loaded.

Some changes in the "percentage table" (which shows what percentage of the New York-Chicago rate shall be charged to and from other competing points) were adopted.

A rule was adopted concerning supplying ice for refrigerator cars, it being charged that a line had offered to pay for the ice used with freights paying more than (old) fourth-class rates, before the property arrived at its pro-rating points. The new rule declares that railroad companies may supply ice from freight paying fifth-class or higher rates, the expense to be pro-rated from the common point to destination; but no line will be allowed to bear the expense of icing cars before they arrive at the pro-rating point. Ice used with beer or other freight below fifth-class must be supplied by the shippers.

The Peoria lines agreed to adhere to the agreement heretofore made until changed in accordance with the regulations of the committee.

Some difficulties having arisen as to the difference between rates to places on the east bank and those on the west bank of the Mississippi, it was definitely established (by the Trunk Line Committee after the Joint Committee's meeting) that from points on the east bank the rates shall be the same as from East St. Louis, that is, not less than 116 per cent of the Chicago rate, and from points on the west bank the rate shall be the east bank rate plus the bridge toll or transfer charge. This applies to all Mississippi River towns as far north as Davenport.

The Chicago roads not being all represented at the meeting, the Committee on the Division of Traffic, which will have to provide for the Grand Trunk's new line, took no action, but reported that they purposed to meet soon to deal with the question.

Civil Engineers' Club of Cleveland.

This society held its first public meeting in Cleveland in the rooms of the Board of Education, Saturday evening, March 27, at which an interesting address was delivered by the President, Mr. Charles Paine, General Superintendent of the Lake Shore & Michigan Southern Railway. Mr. George H. Ely described the improvements now in progress on the St. Mary's River, between Lake Superior and Lake Huron; Prof. John S. White, of the Brooks School in Cleveland, gave some account of the different methods of technical instruction in engineering schools, with special reference to the Worcester school and the Massachusetts Institute of Technology; and remarks were made by Rev. Dr. J. W. Brown, Col. Charles Whittlesey and Col. J. M. Wilson. The following is a list of the members: Charles Paine, Col. J. M. Wilson, Amasa Stone, Charles Latimer, J. C. Brewer, William Chisholm, E. O.

Schuergerl, S. Sheldon, B. F. Morse, Hosea Paul, M. E. Rawson, J. F. Hollaway, M. D. Leggett, L. L. Leggett, J. M. Blackburn, A. Mordecai, C. H. Burgess, A. M. Wellington, C. M. Barber, Dr. J. W. Brown, C. H. Strong, James Barnett, N. P. Bowler, C. A. Walter, G. A. Hyde, J. Wainright, W. P. Rice, J. S. Oviatt, J. D. Crehore, P. D. Cooper, H. M. Claffin, G. Lindenthal, John A. Westbrook, F. S. Barnum, M. W. Kingsley, G. M. Reid, A. H. Porter, L. Dautel, L. A. Roby, S. J. Baker, E. Tracy Scovill, J. H. Parsons, Otto Dercum, G. Bartol, W. Rauschel, A. S. Hovey, R. Cudell, G. Geuder, J. M. Ackley, J. Ireland, J. A. Bidwell, J. B. Davis, J. C. Churchill, F. W. Le Prevost, Fred. J. Locke, F. M. Fervis, N. Wright, Charles B. Stuart, J. S. White.

Indianapolis Passenger Meeting.

At a meeting held in Indianapolis, March 31, sixteen roads were represented, including all those in the district of which Indianapolis is the centre. The following agreement was adopted and signed:

1. We, the undersigned, hereby agree, upon honor, each with the other, that on and after April 1, 1880, we will strictly maintain tariff rates for passengers. We solemnly pledge ourselves that we will not (without ten [10] days' written notice to all the other parties to this agreement), directly or indirectly, reduce tariff rates by paying commissions, allowing rebates, issuing free passes or tickets, or by in any manner whatsoever offering special inducements of pecuniary value to secure traffic, except commissions paid to agents.

2. And we further agree to discharge any agent found guilty of violating this agreement, unless he can show direct authority from his general passenger or ticket agent for said violation; and any agent so discharged shall not be re-employed by the line discharging him, or by any connecting lines in the same interest, or by any other line party to this agreement, within one year from the date of his discharge.

3. We further agree, one with the other, to redeem at tariff rates any tickets of our own issue sold at less than the regularly published rates; and if any member, party hereto, knows or believes that any competitor, party hereto, has violated this agreement, he shall call a meeting of which the accused shall have special notice, with a view to determining the accuracy of his information, and if the charges are sustained, a report of the facts shall be forwarded to the managing officer of the road so violating the agreement, together with an expression of opinion as to the confidence to be placed in the integrity of such a general passenger or ticket agent.

To the faithful performance of this agreement we hereby pledge our sacred honor.

ELECTIONS AND APPOINTMENTS.

American Steamship Co.—At the annual meeting in Philadelphia, April 5, the following were chosen: President, Henry D. Welsh; Directors, Josiah Bacon, John Price Wetherill, D. B. Cummins, Wm. D. Winsor, N. Parker Shortridge, Strickland Kneass, George B. Roberts, George N. Allen, J. N. Du Barry, Henry C. Butcher. The company owns the Pennsylvania steamship line between Philadelphia and Liverpool.

Baltimore & Ohio.—The following appointments are announced for the Pittsburgh Division, Superintendent E. K. Hyndman having resigned: G. M. Serpell, Master of Road; J. E. Sampson, Master of Machinery; J. H. Gallagher, General Supervisor of Trains; John Barron, Train-Master.

Canada Southern.—Mr. J. B. Morehead has been appointed Assistant Superintendent of the Canada Division, with office in St. Thomas, Ontario.

Central Vermont.—Mr. W. F. Smith has been appointed General Passenger Agent, in place of S. W. Cummings, who has gone to the Hoosac Tunnel Line. Mr. Smith has been Agent in New York for several years.

Chicago & Alton.—At the annual meeting in Chicago, April 5, the three directors whose term then expired were re-elected, as follows: T. B. Blackstone, John B. Drake, W. G. Hunt. The board re-elected T. B. Blackstone, President; Charles H. Foster, Secretary and Treasurer.

Chicago & Alton Leased Lines.—At the annual meetings in Chicago, April 5, the following were chosen: *Joliet & Chicago*.—President, John Crerar; Secretary, Charles H. Foster; Directors, John Crerar, John F. Slater, J. McGregor Adams, John B. Drake, and T. B. Blackstone. *Mississippi River Bridge*.—President, John Crerar; Secretary and Treasurer, Charles H. Foster; Directors, John J. Mitchell, George Straut, T. B. Blackstone, John B. Drake, John Crerar. *Alton & St. Louis*.—President, Lorenzo Blackstone; Secretary, T. B. Blackstone; Directors, Lorenzo Blackstone, John J. Mitchell and T. B. Blackstone. *St. Louis, Jacksonville & Chicago*.—President, George Straut; Treasurer, T. B. Blackstone; Secretary, Robert H. Noltor; Directors, George Straut, N. W. Green, Charles D. Hodges, L. E. Worcester, Josiah Sawyer, John Crerar and T. B. Blackstone.

Chicago, Milwaukee & St. Paul.—Mr. George E. Merchant has been appointed Superintendent of the Sioux City & Dakota Division. He was Superintendent of the road before its lease to this company.

Danville, Olney & Ohio River.—The present officers of this road are: Edward Wheaton, General Manager; Joseph M. Graham, Chief Engineer; Robert Knight, Superintendent; office at Westfield, Clark County, Ill.

Elizabeth City & Norfolk.—Mr. J. Foster Crowell, of New York, is Chief Engineer, and W. W. King, Superintendent of Construction.

At a recent meeting, the Board of Directors was reorganized, and is now as follows: J. H. Hall, Philip John, D. C. Lippincott, Frank Vaughan, Elizabeth City, N. C.; Henry J. Cullen, W. G. Dominic, J. N. Whiting, New York. The board elected Frank Vaughan, President; W. G. Dominic, Vice-President and Treasurer; J. H. Hall, Secretary.

Fl. Wayne & Terre Haute.—Mr. Edwin Evans, President of this company, has been appointed Chief Engineer also.

Houston & Texas Central.—Mr. J. C. Hogan has been appointed General Immigrant Agent, with office in Houston, Tex. Mr. A. Falkner succeeds Mr. Hogan as General Northern Agent.

Indianapolis & Evansville.—This company has been organized with the following directors: Charles Vile, Matthew Henning, J. J. Kleiner, John H. Roelker, R. K. Dunkerson, Samuel Vickery, Evansville, Ind.; John C. New, T. A. Lewis, Indianapolis; Hugh J. Jewett, George R. Blanchard, H. R. Duval, New York. The board elected Hugh J. Jewett, President; F. A. Lewis, Vice-President; R. G. Hervey, General Manager; E. H. Harriman, Treasurer; C. S. Lewis, Secretary and Assistant Treasurer.

Junction.—At the annual meeting in Philadelphia, April 5, the following were chosen: President, Isaac Hinkley; Directors, George B. Roberts, Henry M. Phillips, Henry

Lewis, Franklin B. Gowen; Secretary, Joseph Lesley; Secretary pro tem., John C. Sims, Jr.; Treasurer, John Walker, Jr. The company owns the line connecting the Reading, the Pennsylvania and the Philadelphia, Wilmington & Baltimore roads in Philadelphia.

Louisville & Nashville.—The following changes of division superintendents are announced: Mr. James Montgomery, late Superintendent of Second Division and Memphis Line, is appointed Superintendent of the St. Louis & Southeastern and Evansville, Henderson & Nashville divisions, with office in St. Louis. Mr. James Geddes, Superintendent of the Nashville & Decatur Division, is placed in charge of the Second Division also, retaining his office in Nashville. Mr. James T. Harrahn is appointed Superintendent of the Memphis Line, with office in Memphis.

Macon & Brunswick.—Mr. James M. Edwards has been appointed Superintendent. He has been Superintendent of the North-eastern Railroad, of Georgia, for some time.

New Jersey & New York.—The bondholders have organized a new company, with the following directors: Garrett Ackerson, Jr., Charles L. Atterbury, Edward P. Carpenter, Robert W. De Forest, Isaac D. Demarest, Henry C. Deming, Louis Fitzgerald, Joseph E. Gay, Valentine L. Lary, John J. McCook, Jacob Van Buskirk, Peter Ward, J. C. Westervelt. The board elected Valentine L. Lary, President; Isaac D. Demarest, Vice-President; Henry C. Deming, Secretary and Treasurer. Mr. Lary built a large part of the road as contractor, is a large creditor and is now Receiver of the road.

Old Orchard Beach.—The directors of this new company are: M. G. Palmer, Samuel E. Spring, Portland, Me.; George C. Calef, W. S. Dennett, Saco, Me.; Amos Paul, South Newmarket, N. H.; Dr. J. R. Nichols, Haverhill, Mass.; J. T. Furber, Boston. Nearly all of them are connected with the Boston & Maine Company. The board elected J. T. Furber, President; George C. Calef, Secretary; M. L. Williams, Treasurer.

Panama.—At the annual meeting in New York, April 5, the following directors were chosen: Trenor W. Park, John R. Marshall, Charles G. Franklyn, D. O. Mills, J. G. McCullough, Joseph Ogden, Wm. B. Dinsmore, Samuel C. Thompson, George Garr, Charles D. Leverick, George A. Hoyt, Thomas Maddock, Christopher Meyer. The new directors are Messrs. Mills and Dinsmore, who replace John M. Burke and H. B. Baxter.

Penobscot & Lake Megantic.—At the annual meeting last week the following directors were chosen: W. P. Ives, T. S. Morey, J. H. Pope, Sherbrooke, P. Q.; E. R. Burpee, M. S. Drummond, Noah Woods, Bangor, Me.; James W. Emery, Cambridge, Mass.

Pittsburgh & Castle Shannon.—At the annual meeting in Pittsburgh, April 1, the following were chosen: President, J. H. Ortmann; Directors, John Jahn, James M. Bailey, Charles Kohlmyer, E. Rohrkaste, James McMasters, Walter Chess, S. Kaufmann, F. D. McKeever, J. F. Denniston. This election was held in place of one held some weeks ago and afterward decided to be illegal by the Court.

Pittsburgh, Wheeling & Kentucky.—At the annual meeting in Wheeling, W. Va., the following directors were chosen: C. D. Hubbard, H. G. Lazear, John McClure, Thomas D. Messier, M. Reilly, Wm. Thaw. The board elected C. D. Hubbard, President; J. M. Belleville, Secretary; S. B. Leggett, Assistant Secretary; W. H. Barnes, Treasurer. The road is leased to the Pittsburgh, Cincinnati & St. Louis.

Pullman Palace Car Co.—Mr. Robert Barry has been appointed Inspector, in place of E. H. Weirman, resigned. Charles R. Lincoln, succeeds Mr. Barry as Cashier at New York.

Scioto Valley.—Several changes in the officers of this road have been noted recently, and a full list is now as follows: George D. Chapman, President; H. L. Morrill Vice-President and General Superintendent; James Robinson, Treasurer; John J. Archer, General Freight and Ticket Agent; J. P. Curry, Secretary and Auditor; E. J. Jones, Car Accountant; offices at Columbus, Ohio.

Shenandoah Valley.—Mr. Joseph W. Coxe is Auditor and General Ticket Agent, and G. H. Dugdale, General Freight and Passenger Agent. Offices at Charlestown, Jefferson County, W. Va.

Stillwater & Hastings.—The directors of this new company are: J. S. Anderson, David Bronson, E. W. Durant, R. F. Hersey, John C. Higgins, E. L. Hooper, Fayette Marsh, Samuel Matthews, Charles N. Nelson, D. M. Sabin, Isaac Staples. Office in Stillwater, Minnesota.

Stony Creek.—This road is now run independently. The offices are in Norristown, Pa., and the officers are: James Boyd, President; Howard Boyd, Secretary and Treasurer; George B. Boggs, Superintendent and Engineer.

Toledo, Delphos & Burlington.—Mr. I. H. Burgoon, General Superintendent, will act as General Freight Agent also. Mr. G. G. Grund has been appointed General Ticket Agent and Assistant General Freight Agent. Offices at Delphos, Ohio.

Virginia Railroad Commissioner.—The Governor of Virginia has appointed Gen. James McDonald Railroad Commissioner, in place of Col. Thomas H. Carter resigned. Gen. McDonald will serve until April, 1881, when the term of Asa Rogers, Jr., who was elected to the position by the Legislature last winter, will begin.

Washington & Hope.—The officers are: W. H. Carruth, President; J. D. Beardsley, Superintendent. Office at Washington, Arkansas.

Western & Atlantic.—Mr. Joseph M. Brown has been appointed Ticket Auditor, in place of T. H. Bell, transferred to other duties. Mr. E. P. Black has been appointed Claim Agent.

PERSONAL.

—Col. Thomas H. Carter has resigned his position as Railroad Commissioner of the state of Virginia. Col. Carter is the first and only Commissioner under the present law, and has made a very creditable record for himself. He had still about a year to serve.

—Mr. Ambrose Arnold, Superintendent of the Central, Southern, Northern and Western divisions of the Central Vermont Company's lines, has resigned his position. He will retire altogether from railroad business and intends to settle down quietly on a farm at Westminster, Vt., which he owns. Mr. Arnold has been on the road for 30 years, beginning as a conductor on the Sullivan road in 1850.

—Mr. Charles Sooy-Smith, Assistant Superintendent of Track, Bridges and Buildings of the Atchison, Topeka & Santa Fe, was married March 31 to Miss Jennie Stringfellow, daughter of Gen. B. F. Stringfellow, of Atchison, Kansas.

TRAFFIC AND EARNINGS.

Railroad Earnings.

Reports of earnings for various periods have been received as follows:

Year ending Dec. 31:	1879	1878.	Inc. or Dec.	P. c.
Col. & Hocking Valley.....	\$1,032,573	\$871,553	I.	\$161,020 18.5
Net earnings.....	395,709	391,127	I.	4,572 1.2
Columbus & Toledo.....	574,893	517,871	I.	57,022 11.0
Net earnings.....	260,200	222,250	I.	38,001 17.1
Three months ending March 31:	1880.	1879.		
Bur., Cedar Rap. & No.....	\$537,811	\$326,563	I.	\$211,248 64.7
Chi. & Eastern Ill.....	244,000	195,585	I.	48,424 24.8
Chi., Mil. & St. Paul.....	2,403,000	1,700,737	I.	702,263 41.3
Cleve., Col., Cin. & Ind.....	1,136,055	857,201	I.	278,854 32.6
Hannibal & St. Joe.....	549,972	485,984	I.	63,988 13.2
Mobile & Ohio.....	622,085	527,886	I.	94,199 17.8
N.Y. Cen. & Hud. Riv. St. Louis, Iron Mt. & So.....	7,765,079	6,709,508	I.	1,056,171 15.7
St. Louis & San. Fran.....	592,783	260,713	I.	332,070 127.4
Union Pacific.....	3,619,997	2,739,302	I.	880,695 32.2
Two months ending Feb. 29:				
Albany & Susquehanna.....	\$204,398	\$160,249	I.	\$44,147 27.6
At. & Gt. Western.....	773,486	593,358	I.	180,128 30.4
At. Miss. & Ohio.....	318,824	231,345	I.	87,479 37.8
Carolina Central.....	92,946	83,291	I.	9,655 11.2
Central Iowa.....	136,219	103,200	I.	33,019 32.0
Chicago, Bur. & Quincy.....	2,381,061	2,087,675	I.	293,416 14.1
Net earnings.....	1,156,092	930,990	I.	216,012 23.0
Del. & Hudson, Pa. Div.....	186,047	183,912	I.	12,735 6.9
N. Y. & Canada.....	98,965	53,106	I.	45,559 85.8
N. Y., L. E. & West.....	2,548,599	2,354,564	I.	194,035 8.2
Net earnings.....	692,400	458,457	I.	233,943 51.0
Hensselaer & Saratoga.....	226,363	165,955	I.	60,408 36.4
Month of February:				
Albany & Susquehanna.....	\$104,434	\$82,887	I.	\$21,547 26.0
At. & Gt. Western.....	384,000	294,712	I.	89,288 30.3
At. Miss. & Ohio.....	161,954	121,451	I.	40,503 33.3
Carolina Central.....	48,213	45,383	I.	2,830 6.2
Central Iowa.....	58,200	45,139	I.	13,061 29.0
Chicago, Bur. & Quincy.....	1,180,853	982,377	I.	198,476 20.2
Del. & Hudson, Pa. Div.....	84,484	95,849	D.	11,365 11.9
N. Y. & Canada.....	48,855	27,519	I.	21,336 77.6
N. Y., L. E. & West.....	1,252,218	1,207,391	I.	44,827 3.7
Hensselaer & Saratoga.....	111,912	86,406	I.	25,506 29.5
Month of March:				
Bur., Cedar Rap. & No.....	\$188,324	\$111,924	I.	\$76,400 68.3
Chi. & Eastern Ill.....	88,278	67,025	I.	21,253 31.7
Chi., Mil. & St. Paul.....	901,000	632,896	I.	268,104 42.4
Cleve., Col., Cin. & Ind.....	379,415	272,963	I.	106,452 39.0
Denver & Rio Grande.....	168,000	.....	.....	.....
Hannibal & St. Joe.....	223,026	211,899	I.	11,127 5.2
Mobile & Ohio.....	168,069	162,740	I.	5,929 3.6
N.Y. Cen. & Hud. Riv. St. L., Iron Mt. & So.....	2,856,835	2,474,392	I.	380,443 15.4
St. L. & San Fran. Union Pacific.....	450,920	353,147	I.	96,473 27.3
St. L. & San Fran. Union Pacific.....	197,300	85,300	I.	112,000 131.6
Union Pacific.....	1,739,000	1,301,000	I.	438,000 33.7
Third week in March:				
Minn. & St. Louis.....	\$10,295	\$8,186	I.	\$2,109 24.7
N. Y. & New Eng. land.....	38,980	33,662	I.	5,318 15.8
Week ending March 19:				
Great Western.....	\$110,602	\$82,469	I.	\$28,133 34.2
Week ending March 26:				
Great Western.....	\$100,546	\$76,553	I.	\$23,993 39.2
Week ending March 27:				
Grand Trunk.....	\$208,882	\$151,187	I.	\$58,695 38.8

Coal Movement.

Coal tonnages for the week ending March 27 were as follows:

	1880.	1879.	Decrease.	P. c.
Anthracite.....	300,419	457,113	156,694	21.2
Semi-bituminous.....	13,190	.....	.....	.....
Bituminous, Penna.....	69,777	.....	.....	.....
Coke, Pennsylvania.....	43,254	.....	.....	.....

The semi-bituminous trade is at an almost complete standstill, owing to the miners' strike in the Clearfield Region, and the strike on the Cumberland & Pennsylvania Railroad.

The anthracite trade is quiet, but, it is claimed, prosperous, the companies generally receiving more money now than they did for the greater output at this time last year.

Winter Hog Packing.

The number of hogs packed at each of the six leading Northwestern packing points, for the winter season, of four months, from Nov. 1 to March 1 has been as follows:

	No. Packed.	P. c. of total.
Chicago.....	1879-80. 2,525,219	1878-79. 2,043,115 55.2
St. Louis.....	577,793	629,261 12.6
Cincinnati.....	534,559	423,584 11.7
Indianapolis.....	364,021	472,455 8.0
Milwaukee.....	340,783	444,221 7.4
Louisville.....	231,259	187,500 5.1
Total.....	4,573,634	5,300,142 100.0

There was thus a decrease at every point except Louisville, the aggregate being nearly 14 per cent. The changes in proportions are singularly small.

It must be remembered there is a great deal of packing done now at smaller places, called "outside points," some of which such as Atchison and Cedar Rapids, have developed a quite important business.

Grain Movement.

For the week ending March 27 receipts and shipments of grain of all kinds at the eight reporting Northwestern markets and receipts at the seven Atlantic ports have been, in bushels, for the past seven years:

Year.	Northwestern.	Atlantic.
1874.....	2,567,282	1,238,839
1875.....	1,567,095	1,054,587
1876.....	1,838,415	1,250,759
1877.....	1,844,306	1,182,741
1878.....	4,339,880	2,528,517
1879.....	3,030,710	2,890,223
1880.....	4,912,230	4,172,104

The receipts of Northwestern markets for the week this year were nearly 15 per cent. greater than in the previous week, 60 per cent. greater than in the corresponding week of last year, and much greater than in any other week of any other year while navigation was closed. The shipments of these markets were in every way extraordinary, considering the near approach of the opening of navigation and the firmness of the rate at 35 cents, against about 15 cents in the corresponding week of last year. The shipments were 44

per cent. greater than in the corresponding week of last year, and were by far the largest ever made in a single week from these markets by rail. The receipts at Atlantic ports were nearly a fourth larger than in the previous week, one-third greater than in the corresponding week of last year, and very much the largest ever received while navigation was closed.

Of the receipts of Northeastern markets this year, Chicago had 46.8 per cent., St. Louis 17.7, Toledo 14.8, Peoria 10.8, Milwaukee 5.2, Detroit 4.8, and Cleveland 0.4 per cent.

Of the receipts of Atlantic ports New York had 54.2 per cent., Baltimore 17.1, Philadelphia 14.1, Boston 6.4, New Orleans 5.6, Portland 2.2, and Montreal 0.4 per cent. New York's receipts are one-half greater than in the previous week; the other places in the aggregate have about the same as them.

Exports of grain of all kinds from the Atlantic ports have been, for four successive weeks, as follows:

	March 31.	March 24.	March 17.	March 10.
Flour, bbls.	35,630	50,984	59,378	51,835
Grain, bush.	4,069,295	5,400,028	3,679,890	4,035,901

The increase in the general movement has not been attended by an increase in exports. Wheat exports are larger than they have been, but corn continues to be the chief grain moving. Sea-board stocks of wheat continue about the same. Wheat formed but 17 per cent. of the Northwestern receipts, 18 per cent. of the Northwestern shipments and 24½ per cent. of the Atlantic receipts in the week ending March 27.

Baltimore grain receipts in March were as follows, flour in barrels and grain in bushels:

	1880.	1879.	Inc. or Dec.	P. c.
Flour, barrels	130,030	147,219	D. 11,189	7.6
Wheat	1,594,703	1,620,163	D. 25,460	1.6
Corn	3,546,048	2,930,504	I. 609,544	20.8
Other grain	200,786	162,676	I. 38,110	23.4
Total grain	5,335,537	4,713,343	I. 622,194	13.2

Total, flour reduced to wheat 6,015,087 5,449,438 I. 566,249 10.4

For the three months ending March 31 the receipts were as follows:

	1880.	1879.	Decrease.	P. c.
Flour, barrels	290,724	347,738	57,014	16.4
Grain, bushels	10,281,780	12,164,814	1,883,028	15.5

Total bushels 11,735,406 13,903,504 2,168,098 15.6

Exports in March were 47,421 barrels and 4,756 sacks of flour and 4,655,162 bushels of grain.

Cotton.

The receipts of cotton at sea-port cities for the seven months of the crop year, from Sept. 1 to April 2, for five years are reported as follows by the *Commercial and Financial Chronicle*.

	1880.	1879.	1878.	1877.	1876.
Bales	4,495,062	4,173,503	3,953,344	3,756,849	3,813,486

This year's receipts were thus nearly 8 per cent. greater than last year, and still more than in any previous year.

The exports for the same time have been 2,917,463 bales this year, against 2,928,819 last year.

New York-Boston Passenger Rates.

After long discussion, the New York, New Haven & Hartford and the Boston & Albany companies have agreed to sell through tickets between New York and Boston by the all-rail routes at 85. These will be limited tickets, however, not transferable and allowing no stop-over; the old rate of 86 will still be charged for unlimited tickets.

Some reduction has been under discussion ever since the steamboat companies began fighting and put the rate down to 81 between the two cities by the boat-and-rail lines. It has always been understood that the Boston & Albany favored a reduction, but that the New Haven Company would not agree to it.

Southwestern Association Rates.

A circular was issued on April 6 by Commissioner Midgley, containing the revised joint freight tariff from Kansas City, Leavenworth, Atchison, and St. Joseph to the East. This tariff went into effect yesterday, and is in accordance with the eleven classifications decided upon last Friday. The new rates from St. Joseph, Atchison, Leavenworth, and Kansas City to Chicago, according to the eleven classes, are as follows: 75 cents, 60 cents, 45 cents, 37 cents, 27 cents, 27 cents, 27 cents, 20½ cents, 25½ cents, 25½ cents; wheat, 25½ cents; corn, rye, oats, and barley, 20½ cents; dressed beef and mutton, 50 cents; live stock, \$67.50 per car; hogs, per car, \$47.50; sheep, per car, \$45; ore—silver or lead—22½ cents per 100 pounds. Dressed beef or mutton, carried in ordinary box cars, will be charged 5 cents per 100 pounds less than the rates quoted on shipments in refrigerator cars. No single shipment rated less than 100 pounds of the class to which the freight belongs.

The railroads comprising the association will charge the following prices on shipments carried by all-rail routes from St. Joseph, Atchison, Leavenworth, or Kansas City to Baltimore, Philadelphia, New York or Boston:

	Class	1.	2.	3.
To East St. Louis, East Hannibal, Quincy or Burlington		50	4½	34
To Chicago		75	60	45
To Toledo		1.04½	82	62

On business to Boston, the rate on first-class should be 61 cents, and on second class 50½ cents per 100 lbs. to East Mississippi River points.

Fruit Rates from Southern Illinois.

The Illinois Central on April 5 issued a circular containing the schedule of the fruit arrangements for 1890. The fruit train will start from Cairo and run to Chicago and Dubuque when the bulk of shipments warrant, and will stop only where fruit is to be received or delivered. The following are the rates on the Chicago train:

	Per 100 lbs. cts.
From stations between—	
Cairo and Anna, inclusive, to Chicago	80
Cobden and St. Johns, inclusive, to Chicago	75
Tamara and Central City, inclusive, to Chicago	70
Odin and Mattoon, inclusive, to Chicago	65

From any station as below, a full car load, not to exceed 10,000 pounds, to one consignee, they to give reasonable notice, say twenty-four hours, of the want of car or cars. And in accepting these car load rates it should be understood that the consignee or consignors will attend to the loading of such car, the duty of the road being to see that correct weights are given, cars properly locked and sealed, and billed to the consignee or firm designated by shippers.

	Per 100 lbs. cts.
From stations between—	
Cairo & Anna, inclusive to Chicago	\$100
Cobden and St. Johns, inclusive to Chicago	91
Tamara and Central City, inclusive to Chicago	85
Odin and Mattoon, inclusive to Chicago	75

Fruit cars will not be loaded with more than 10,000 pounds.

THE SCRAP HEAP.

Railroad Equipment Notes.

The Missouri Car & Foundry Co., in St. Louis, has just finished 125 cars for the Iron Mountain road, and a number for the St. Louis, Alton & Terre Haute.

Billmeyer & Smalls, at York, Pa., have recently shipped some very handsome passenger cars to the Denver & Rio Grande road.

The Hinkley Locomotive Co., in Boston, are building four engines for the New York, Woodhaven & Rockaway road.

The cars for the New York, Woodhaven & Rockaway road will be carried on elliptic springs, made by A. French & Co., of Pittsburgh.

The Rogers Locomotive Works, at Paterson, N. J., are building four engines for the New York, Woodhaven & Rockaway road.

The Portland Company, at Portland, Me., is to build several engines for the Milwaukee, Lake Shore & Western road.

The Cincinnati, Indianapolis, St. Louis & Chicago shops are building a number of new flat cars for the road, which are to carry 30,000 lbs. The road has a large business in stone from quarries on its line.

The Cleveland Bridge & Car Works, at Cleveland, O., have just finished a lot of freight cars for the Union Pacific, and have begun on 250 for the New York, Pennsylvania & Ohio.

The Gilbert & Bush Co., at Troy, N. Y., are to build 20 of the passenger cars for the New York, Woodhaven & Rockaway Beach road.

The Taunton (Mass.) Locomotive Works lately delivered a new freight engine to the Connecticut River road.

The Pennsylvania Railroad shops at Meadows, N. J., have built and repaired several passenger cars for the West Jersey road.

The Chicago & Northwestern shops in Chicago are to build 25 new locomotives for the road.

The New York, Lake Erie & Western hammer-shop at Susquehanna, Pa., is working on an order to make 3,000 car-axles for the road.

The Philadelphia & Reading shops, at Reading, Pa., are building 500 box cars and a large number of the new "schooner" coal cars. These are eight-wheel dump cars, 22 ft. long in the body and are expected to carry about 18 tons of coal.

Iron and Manufacturing Notes.

The new owners have started up the old rolling mill at Dover, N. J., and it is now running on an order for 500 tons of fish-bars.

Warren Furnace, at Hackettstown, N. J., has gone into blast. A second stack is to be built, and probably a rolling mill will be added by the company.

Wallace & Sons, of No. 89 Chambers street, New York, have lately received an order for about 40,000 lbs. of copper sheets and tubes for a new factory.

East Furnace, at Minersville, Pa., has been repaired and will soon be ready to go into blast.

The A. Furnace of the Edgar Thomson Steel Co., on March 28 turned out 113 tons 1,880 lbs. pig-iron, made with Connelville coke from a mixture of Spanish, English, Lake Superior and Missouri ores.

The Nashua Iron & Steel Co., at Nashua, N. H., lately forged a steel steamboat shaft 28 ft. 2 in. long and 11½ in. diameter at journals.

The Eureka Iron Co. lately declared a dividend of 15 per cent., and ordered the building of two new furnaces at Birmingham, Ala.

The Southern States Coal, Iron & Land Co. has begun to build a second blast furnace at South Pittsburgh, Tenn.

The blast furnace of the Katahdin Iron Works in Maine is in full blast, with orders for some time ahead for all the iron that can be made.

The Napanoch Rolling Mill Co. lately started up its rolling mill at Napanoch, Ulster County, N. Y., and is running full double turn.

Spaulding, Jennings & Co. have nearly finished their new steel works at West Bergen, N. J. Besides the steel-smelting furnaces they will have two hammers and two trains of rolls, and expect to turn out 1,500 tons of steel a year.

The old Mill Hall Furnace, in Clinton County, Pa., which has been idle 25 years, is to be rebuilt and started up as a coke furnace.

The Valentine Rolling Mill, at Williamsport, Pa., has been started up.

The Verona Tool Works, at Verona, near Pittsburgh, have met with such a demand for their new "steel washers," that for a time it was difficult to get steel fast enough.

The Forest City Steel Co. expects to have its new works in Cleveland, O., ready to start in a few days.

The old Empire Rolling Mill in Cincinnati has been started up, and is now known as the Cincinnati Rolling Mill.

The Spring Lake Iron Co. has started up its blast furnace at Spring Lake, Mich. It is a charcoal furnace, 10 ft. 6 in. high.

Moran & Co., bolt-makers, in St. Louis, have enlarged their works, to enable them to meet orders.

Nelson Furnace, at Shoals, Ind., has been leased and will soon be put in blast by the lessees.

A large force is now employed on the new rolling mills of the North Chicago Rolling Mill Co., on the land lately bought by the company in South Chicago.

The Oxford Iron Co., at Oxford, N. J., is now running its small furnace on pig-iron, and expects to continue making pig-iron through the summer.

The Tennessee Rolling Mill and Trigg Furnace, formerly operated by D. Hillman & Sons, will be sold at public sale at Cadiz, Ky., May 10.

Prices of Rails.

The market for steel rails is very quiet. Sales are reported at \$50 per ton at mill, and for English rails, \$78 per ton, delivered at tide. The mills are busy, and makers are not pressing for orders, but the prices of raw material are lower.

Iron rails are rather more active, but buyers are looking for concessions. Quotations are from \$65 per ton at mill for heavy sections, up to \$70 for light rails.

Old iron rails are dull, and somewhat lower. Philadelphia prices are \$38 to \$39 per ton. At New York, sales of 3,500 tons are noted with prices from \$38 to \$40. At Pittsburgh, the market is bare, and there are no quotations.

Railroad spikes remain unchanged; Pittsburgh prices are 4½ cents per lb., on 30 days' time.

British Rail Exports.

Exports of railroad iron of all sorts (including considerable besides rails), for the month of February and the two months ending with February, have been:

	1880.	1879.	Increase.	P. c.
To United States	12,842	737	12,105	1,642.5
February	28,169	812	27,357	3,369.1

	1880.	1879.	Increase.	P. c.
To all countries	35,983	28,081	7,902	28.1
February	82,761	48,554	34,207	70.4

It seems that in February there was considerable decrease in the exports to countries other than the United States; but for the two months there has been an increase. The United

States now leads as the market for British rails, followed pretty closely by British India, and these together took more than three-fifths of the total exports for the two months. The exports to the United States were sufficient to lay 320 miles of track with 56-lb. rails.

For the month of February, the exports of rails (exclusive of other railroad iron) to the United States were:

	1880.	1879.
Iron	6,608	301
Steel	6,162	436
Total	12,770	737

It would appear, then, that in this month there were but 72 tons of railroad iron other than rails this year, and none at all last year exported to this country. It appears that more iron than steel is sent here.

Uniformity in Car Construction.

A meeting was held last week in Knoxville, Tenn., at which were present the Master Car-Builders of the Atlantic, Mississippi & Ohio, the East Tennessee, Virginia & Georgia and the Memphis & Charleston roads. The object of the meeting was to discuss and agree upon uniform patterns of box, stock and flat cars for these three roads. A plan was agreed upon after full discussion and comparison of views.

Blue and Red.

The Engineer was discharged at once for saying that the red-nosed man looked blue. The Superintendent remarked that it was the worst case of color-blindness he had ever known on the road.—*Boston Transcript*.

"John, dear," she said, "what makes the engine go, and why does the smoke puff out of the chimney there so hard?" John studied a minute and then he said: "Well, you see, the engineer opens that thing in the cab, there, and that lets the steam down under the engine; the steam makes the wheels go round and those rods fastened to the wheels work up in front there and just pump out all the smoke out of the chimney." And she was quite satisfied and said: "Why how simple it is, John; I thought it was a good deal harder than that."

"Is this my train?" asked a traveler at the Kansas Pacific depot of a lounge. "I don't know, but I guess not," was the doubtful reply; "I see it's got the name of the railroad company on the side, and I expect it belongs to them. Have you lost a train anywhere?"

"Never see such a hard set to suit in all my life," said the brakeman, the other morning, when the sun had come out and the thermometer gone up to 65; just after a cold, northeast storm. "Yesterday morning there was no fire and they all went for me; now this morning I've got the stove red-hot, and they are just raising thunder again. Blamed if I wouldn't rather go back on a freight again." And he went into the baggage car and sat down to think.

The Baltimore *American* is a staid, solemn, stalwart old sheet, but once in a while it unbends itself, and perpetrates a story as hard to believe as if signed "Gath" or "Eli Perkins." It had a special dispatch the other day from Annapolis, telling how a laborer was riding a mule away from a railroad station. Instead of taking the carriage road, the man, somewhat intoxicated, rode the mule right along the railroad track. An express train came along, and he tried to run the mule ahead of the express train. The locomotive struck the mule a blow that landed it on the roadside a dead mule, and bursting the girth of the saddle, hoisted the man on top of the pilot, where he was found unhurt. He sat as though he thought himself still straddling the saddle, and grasping the flag-staff he yelled, "git up, mule!"

There are always compensations. A freight train was wrecked up in Massachusetts the other day. Four cars were broken up, but then in one of them were boxes containing several thousand "fifteen" puzzles, all gone to irretrievable smash.

Color-Blindness in Connecticut.

The Connecticut Legislature has passed a law prescribing that the State Board of Health shall prepare rules and regulations for the examination of railroad employes for color-blindness and visual, prescribing the methods of examination, the fee to be charged and the form of certificate; and they shall recommend to the Governor and the Governor shall appoint by July next two medical experts to make examinations and issue certificates. Before next October, every railroad company in the state must have all the men employed by them as locomotive engineers, firemen, conductors, brakemen, station agents, switchmen, flagmen, gate tenders, or signalmen examined by one of these examiners. After that time any company employing a man without a certificate from one of these examiners shall be liable to a fine of \$200 to \$1,000.

The Fifteen Puzzle on the Railroad.

While we whirl away on the Atlantic & Great Western, the only road in free America that is as broad as it is long, the fat passenger asked me if I "ever worked out the fifteen puzzle?"

I told him with a nameless gratitude in my voice, that I have done almost everything else that is foolish and wicked, but I never became addicted to the fifteen puzzle.

Then he pulled one out of his pocket and settled down to it. Long and patiently he wrought, while the other passengers helped him with suggestions and criticisms. Presently the brakeman looked in and he leaned over the shoulders of the crowd and looked on and assisted. By and by the conductor came along shouting "tickets," and he stopped to see what was the excitement. He pushed his punch in his pocket, and leaned up with the rest of the crowd and told the fat passenger what to do. The excitement ran high and half a dozen bitter disputes arose, which were only quelled by interer ones arising over new points. The train sped on its thundering way, and in due time it slowed up a little and finally stopped. The conductor looked up impatiently.

"What in thunder," he said, "is that fool stopping here for?"

"Water, I reckon, or coal may be," replied the brakeman, without looking up from the puzzle.

"Go out and see what he wants and tell him to go on," said the conductor, returning to the puzzle.

The brakeman, after a feeble protest, and one last, lingering look at the puzzle, which was now farther than ever from completion, went out. In the space of a minute he came back into the car and shouted in a husky, whispered, ghost of a shout:

"Meadville! Change cars for Old City and Franklin! This train stops twenty minutes for dinner!"

A wall of rage and disappointment filled the car. "Why didn't this train stop at Atlantic?" roared the passenger with the sandy goatee.

"I wanted to get off at Evansburg!" howled the man with the sample-cases.

"My sister wanted to get on at Atlantic, and I saw her on the platform when we came through," shouted the woman who talks bass.

"And I," sobbed a timid-looking young man in black clothes, "was to have been married to a girl in Geneva to-day, and now I'll bet you a cow her old dad is walking down the railroad track in this direction, with a shotgun." And

he wailed so pitifully that the whole car howled in sympathetic union.

Just then the express messenger came storming into the coach.

"By chowder," he yelled, "I'd just like to know what this means? I'd like to know if the express company has any rights on this road at all, and how a man is going to deliver or receive packages when—"

And the mail agent pushed him out of the way and stood before the conductor in all the gorgeous panoply of half dress and half working uniform.

"By George," he shouted, "the government shall be informed of this outrageous proceeding. If there's a special agent in the state of Pennsylvania he will be—"

But before he could say any more a telegraphic messenger came in and told the conductor the Assistant Superintendent would like to see him and the engineer in his private office immediately. And it was so that they went, and per- adventure they danced upon the carpet; yea, they stood in the perspiring solitude of the sweat-box.

The next morning the fat passenger beckoned me solemnly into the smoking-car. "Light that," he said, and I lit it.

"Do you know," he said, "when I went to bed last night the wails of more people who wanted to get off, and the agonized faces of those who wanted to get on, in that run from Greenville to Meadville, just haunted me? And I dreamed I died, and went to heaven. I thought I had just fifteen brains, and all the way up to the gate I was trying to straighten them out, and I thought I would go mad. When I got up there the gate was wide open, and all sorts of people were streaming in, just as they pleased. I hadn't the cheek to think I had a right to go in without any credentials or examination, so I hung back looking for St. Peter. And while I was waiting, I hoped to die, if Bob Ingersoll didn't come along and walk right in, and he looked as if he were mighty glad to get there. Presently I saw St. Peter, right by the gate, his head bent down and his eyes fixed on his knees. I told him my name, and where I was from, and asked if I might go in. He didn't say anything, and I began to feel pretty streaked. So I said it again, a little louder. Still he made no reply. Then I shook him by the shoulder, for I was getting pretty anxious, and I began to tell it all over again. It frightened me when he shook me off.

"9, 11, 4, 14, 13, 7— Oh, get out of this, you and your name; if you hadn't bothered me I'd have got it the next move."

"Now," the fat passenger said, solemnly, "I am never going to fool with that gem puzzle again. Not once more."

And he fell into a profound fit of abstraction, and we couldn't raise a laugh from him all day.—*Burlington Hawk-eye.*

OLD AND NEW ROADS.

Atchison & Nebraska.—At the special meeting at Atchison, Kan., March 25, the stockholders voted to ratify and approve the lease of the road to the Burlington & Missouri River in Nebraska. The lessee will take possession this month.

At the meeting representatives of Atchison and Doniphan counties in Kansas were present and claimed the right to vote on \$350,000 stock held by the two counties. The question presented was referred to the Attorney of the company, who said the counties had no interest in the road. The two commissioners then retired. It is understood that this step was taken upon legal advice, and that the counties will proceed to assert their rights through the courts.

Atchison, Topeka & Santa Fe.—In pursuance of its policy of consolidating the leased lines with the company as fast as possible, a circular has been issued making the following proposal to the stockholders of the New Mexico & Southern Pacific Railroad Company, namely: "This company will issue 11 shares of its capital stock in exchange for 14 shares of the capital stock of the New Mexico & Southern Pacific Railroad Company, and this proposal shall be open for acceptance until the 10th inst. All parties who shall signify their acceptance of this proposal on or before that date shall be entitled to participate on the same terms as stockholders in the Atchison, Topeka & Santa Fe Railroad Company in the subscription soon to be issued for the building of the Atlantic & Pacific Railroad. Parties to whom stock is now due under circular 42 will, on the acceptance of the proposal, be entitled to stock of the Atchison, Topeka & Santa Fe Railroad Company in the proportion above stated, to be issued at once; and those holding subscriptions under circular 48 will, on accepting the proposal, be entitled to stock of the Atchison, Topeka & Santa Fe Railroad Company to be issued in exchange when the New Mexico & Southern Pacific Railroad Company's stock is issued under said circular, but without any participation in dividends up to that time."

Atlantic, Mississippi & Ohio.—A circular issued by John A. Hambleton & Co., of Baltimore, sets forth that, under the plan of reorganization this road is to be bought by a Purchasing Committee, and a new company organized, which shall have \$6,921,900 capital stock and shall issue four classes of bonds. First mortgage 6 per cent. bonds shall be given in exchange for the present divisional bonds, issued by the old Norfolk & Petersburg, South Side and Virginia & Tennessee companies. The present consolidated bonds are to be replaced by second mortgage bonds, to bear 4 per cent. interest the first year and 5 per cent. thereafter. There will also be first income 4 per cent. bonds to the amount of the unpaid interest on the present consolidated bonds, and second income 6 per cent. bonds for the claim of the state of Virginia for \$4,000,000.

Atlantic, Tennessee & Ohio.—An agreement has been made by which the Baltimore & Ohio is to acquire control of this road (from Charlotte, N. C., to Statesville), and is to use it as part of the proposed extension of the Virginia Midland from Danville to Charlotte. In return the Baltimore & Ohio is to provide for the debt of the company, which consists of \$65,000 bonds, \$10,000 floating debt, and a judgment for \$92,000, known as the Childs debt, and now held by the sinking fund of the North Carolina Railroad Company.

Baltimore & Ohio.—The following circular dispatch was sent to all divisions of this road April 3 by President Garrett:

"I have the pleasure to announce to the employees of the Baltimore & Ohio Railroad Company on the Main Stem and all branches and divisions that, in accordance with the action of the board of directors, compensation from and after this date will be restored to that in force at the time of the reduction on July 16, 1877."

Bellaire & Southwestern.—The section of 28 miles of this road in Belmont County, O., has been levied on at suit of a contractor for a balance of about \$15,000 due.

Bismarck, Ft. Lincoln & Black Hills.—This company has been formally dissolved. It was organized to build a railroad from Bismarck, Dak., to the Black Hills, but has never built any road. It gives way to a newer organization, the Dakota Railroad Company.

Boston & Lowell.—A special meeting was held in Boston, May 31, to vote on the agreement to lease the Massachusetts Central road. It was ordered that the polls be kept open

each day until April 10, in order that all might vote. It is understood that a majority of votes has already been cast for the lease.

Boston, Hoosac Tunnel & Western.—The Court has refused to vacate the stay of proceedings pending the trial of this company's appeal from the decision vesting the title of part of its road-bed in the Troy & Boston Company, under that company's lease of the property of the old Albany Northern Company. This decision will prevent the Troy & Boston from attempting to take possession of the disputed road-bed pending the trial of the case in the Court of Appeals.

Boston, Winthrop & Point Shirley.—This road, which is a branch running from the Boston, Revere Beach & Lynn to Point Shirley, has been closed through the winter, but was reopened and trains put on April 8. The company has made arrangements to replace the stringer and angle-iron track now used with T rails.

Brattleboro & White Hall.—The Vermont Valley Company has served formal notice upon this company, that it will not permit the use of its right of way in making the connection between this road and the New London Northern. Arrangements had been made to lay track on the right of way in Brattleboro, Vt., but the Valley Company claims that the lease of the new road to the New London Northern cancels the agreement, such a connection not being contemplated at the time the contract was made.

Burlington & Missouri River in Nebraska.—The track is now laid and trains are running on this company's Republican Valley Branch to Orleans, Neb., 11½ miles westward from the late terminus at Republican, and 93 miles from the junction with the main line at Hastings. The new stations are Alma, 87 miles, and Orleans, 93 miles from Hastings.

Cairo & St. Louis.—The United States Circuit Court has entered an order authorizing this company to issue new certificates of stock in lieu of certain stock levied upon and sold under execution. The Court held that the appointment of a receiver and his possession of the road did not interfere with the company's power to issue stock certificates in this case.

Cairo & Vincennes.—The Court has authorized the Receiver to buy 1,500 tons of steel rails, with fastenings, and to issue \$31,500 in certificates to pay for them in part, and also for their transportation.

Canadian Pacific.—The St. John (N. B.) *Telegraph* of April 6 says: "A discussion which rose yesterday in the House of Commons in regard to Dominion lands brought out the Premier in an elaborate speech, for the purpose of showing that the building of the Canadian Pacific Railway would cost the Dominion little or nothing, nearly the whole outlay being met by the sale of lands in the Northwest. Sir John estimates that by the year 1890 the receipts from the sale of these lands will reach the net sum of \$69,000,000, and he calculates that the cost of the Canadian Pacific from Lake Superior will not exceed \$75,000,000. This rosy view of the matter is one which the people of Canada would be greatly pleased to be able to take, but we fear it will be some time before they attain to such a happy frame of mind with reference to their liabilities, present and prospective, as Sir John seems to have been in last evening. There are a good many people who will agree with Mr. Blake that if the receipts from the land were divided by two and the estimated cost of the railway doubled it would be much nearer the truth than Sir John's estimate. That would leave the net cost of the railway to the people of Canada something in excess of \$100,000,000, which we fear is as cheaply as they will be able to get out of it."

Central of New Jersey.—The laborers at the Port Johnson coal docks struck last week for higher wages. There if also trouble with the men at the Elizabethport shops, and a strike there was threatened. These difficulties were settled by granting an increase of from 5 to 10 per cent. An increase of 100 per cent. has also been offered to the trackmen, but they ask for 20 per cent., and some of them have struck.

Work is in progress on extensions of the second track from Hazardville to Lehigh Gap, and from Treichler's to Mauch Chunk, on the Lehigh & Susquehanna Division.

Chicago & Alton.—The board has decided to issue \$1,000,000 additional stock, as proposed in the annual report of the directors. The stock is to be first offered to present stockholders, each to have the option of taking one share of new stock for every 10 shares now held.

Chicago & Pacific.—At a meeting of the stockholders in Chicago, April 2, it was voted to lease this road to the Chicago, Milwaukee & St. Paul Company, and also that the company join with the lessee in executing a mortgage for \$3,000,000 on the road. It is, of course, understood that the lessee will redeem the road from the bondholders who bought it at foreclosure sale by paying off their claims, and the proposed new mortgage is to supply money for that purpose, and for extending the road from Byron, Ill., to Lanark.

After the meeting an application was made by some bondholders for an injunction to prevent the execution of the lease. The Court refused to grant an injunction, but gave leave to enter a motion that no new bonds be issued without permission of the Court. Subsequently the Chicago Superior Court granted a temporary injunction against the lease and mortgage on application of a stockholder.

Chicago, Burlington & Quincy.—As generally expected, this company has declared a stock dividend of 20 per cent. The new stock is to represent surplus earnings heretofore invested in the road and equipment. An extra dividend of 1½ per cent. in cash is also made at the same time.

Chicago, Milwaukee & St. Paul.—Ground has been broken for the new depot on Canal and Madison streets in Chicago, which is to be used by this road and the Pennsylvania Company. During the construction of the new depot the trains of this road will run to and from the Pan Handle depot at Clinton and Carroll streets.

The newly-leased Sioux City & Dakota road will be worked and known hereafter as the Sioux City & Dakota Division.

Chicago, Pekin & Southwestern.—Receiver Reed reports to the Court for February as follows:

Cash balance, Feb. 1.....	\$6,995.31
Receipts from all sources.....	35,065.63

Total.....	\$42,060.97
Disbursements.....	33,075.09

Cash balance, March 1.....	\$8,385.88
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The disbursements were \$1,390.57 less than the receipts. Payments include \$2,585 for new freight cars, and \$6,066.67 on account of liabilities of the former Receiver.

Chicago, St. Paul, Minneapolis & Omaha Line.—Under this general name will be known and worked hereafter the Chicago, St. Paul & Minneapolis, the North Wisconsin and the St. Paul & Sioux City and its proprietary roads.

While united by a semi-consolidation or confederation, and having one general management, the companies still retain their separate boards of directors.

Concord.—This company has increased the wages and salaries of all employees 10 per cent., the increase to date from March 1 last.

Cumberland & Pennsylvania.—Traffic on this road has been resumed, the employees having accepted the company's offer of 10 per cent. increase in wages. Passenger trains have continued to run without interruption, only the coal trains having been stopped by the strike. The coal business would not have been very heavy during the ten days of the strike in any event, many of the miners on the line having struck also.

Davenport & Northwestern.—The New York Court of Appeals has reversed the decision of the Supreme Court in the suit of Jesup and others against Andrew Carnegie, Thomas A. Scott and other members of the Davenport Railway Construction Company, which built a part of this road. The Supreme Court held the defendants liable on certain notes of the company, but the Court of Appeals now holds that they cannot be compelled to pay the corporate obligations.

Denver & Rio Grande.—A Denver dispatch of April 6 announces that the Receiver surrendered this road on that day, in accordance with the compromise decree of Court. The company at once took possession, and will make arrangements to begin work at once on the proposed extensions. The company had received the Grand Cañon property and material from the Atchison, Topeka & Santa Fe a few days previously.

Denver, Middle Park & Pacific.—This company has been organized in Colorado to build a railroad from Denver to Boulder on a line which, it is claimed, is much shorter and better than the existing road.

Detroit, Mackinaw & Marquette.—Besides the grading now in progress on the Marquette end of this road, a contract has been let to M. McDonald, of Niagara Falls, N. Y., for 35 miles from the Straits of Mackinaw. Work on this section was to have been begun this week.

Elizabeth City & Norfolk.—A new contract has been let to John S. King, of New York, who agrees to have the line from Norfolk, Va., to Elizabeth City, N. C., 45 miles, ready for use by Dec. 1. Work has already been begun. The contract provides for the extension of the line through to Newberne.

Evansville & Peoria.—The people of Evansville, Ind., have voted to subscribe \$125,000 in aid of this road, which is to be the Indiana section of the Peoria, Decatur & Evansville. An election was recently held at which the proposed subscription failed to secure the required number of votes, but at a second election it was carried.

Fargo, Columbia & Missouri River.—This company has been organized to build a railroad from Fargo, Dak., on the Northern Pacific, southwest to Columbia on the James River, at the foot of Lake Tebanchichah. The distance is about 125 miles. The company also intends to build a dam at the foot of the lake, which will, it is expected, make the James River navigable for small steamboats for some distance above.

Fernandina & Jacksonville.—This projected road, on which work will soon be begun, as heretofore noted, will leave the Atlantic, Gulf & West India Transit road at the drawbridge four miles below Fernandina, Fla., and run thence in a direct line 20 miles to the St. John's River, opposite Jacksonville. The object is to make a direct connection from Jacksonville with the Cumberland and inside steamboat routes from Fernandina north.

Ft. Wayne & Terre Haute.—At a recent meeting of the board the President was authorized to survey and locate the line from Ft. Wayne to Marion, Ind., and procure the right of way at once.

Georgia Railroad Commission.—The Georgia Commissioners have already begun changes in their standard rates, as appears from the following circular, dated March 26:

"The following changes are made in the standard 'Schedule of Maximum Rates' for passengers and freights, established by the Commissioners, for each railroad in this state, viz:

"1st. The several passenger rates now in use on the Hartwell Railroad, the Cherokee Railroad, the Rome Railroad, and the Sandersville & Tennesse Railroad may be continued as maximum rates on said roads respectively, until changed hereafter by the Commissioners.

"2d. The Brunswick & Albany Railroad Company is allowed to make its maximum rates for freights by adding 30 per centum to the said standard rates established by the Commissioners.

"3d. The Columbus & Rome Railroad Company is allowed to make its maximum rates for freights, by adding 25 per centum to the said standard rates of the Commissioners.

"4th. The Northeastern Railroad Company is allowed to make its maximum rates for freights, by adding 10 per centum to the said standard rates of the Commissioners."

It is announced that the rates fixed by the Commission cannot go into force until nearly the end of April, on account of the provision of the law requiring publication of the rates in seven cities of the state for at least four weeks. This provision will not have been fully complied with until that time.

A meeting of officers of the leading roads in the state was held in Savannah last week to consider the new rates. It is understood that a committee was appointed to prepare statements to be laid before the Commissioners for their consideration.

Greenville & Columbia.—Attorney-General Youmans, of South Carolina, has given notice of motion for an order fixing the minimum price to be accepted for this road at the approaching foreclosure sale at \$2,300,000, in order to protect the interest of the state, which has guaranteed the bonds to that amount. No time has yet been fixed for a hearing on the motion.

Illinois Central.—In an appeal case from Cumberland County the Illinois Supreme Court has just decided that, under this company's charter and land grant, its lands are not subject to taxation until sold and actually conveyed to the purchaser. In the case in question the lands had been sold but the contract of sale had been forfeited by reason of non-payment of the final installments. The Court holds that the exemption continues until the contract of sale is completed and the lands finally conveyed to the purchaser.

Trains are now running over the Middle Division to the new terminus at Pontiac. A local passenger train is run between Chicago and Pontiac without change.

Indianapolis, Decatur & Springfield.—An amicable settlement has been made with the contractors, Irwin & Heustis, who lately filed liens upon the property to enforce a claim for a balance due them on their contract.

Intercolonial.—A spur about four miles long is to be built from River Philip station to Oxford, N. S. The chief object is to reach a large bed of good gravel, which is much needed for ballast. An effort will be made to secure an extension from Oxford to Pugwash, at the mouth of River Philip, a distance of about 14 miles.

Kansas City, Lawrence & Southern.—The track on the Southern Kansas Branch is now laid to Wellington in Sumner County, Kan., 25 miles westward from the late terminus near Winfield, 107 miles from the old terminus at Independence, and 241 miles from Lawrence. Nearly every station in Southeastern Kansas will be a completing point soon, if railroad building there continues.

Lake Erie & Western.—This company is said to have under consideration the building of an extension from Fremont, O., eastward 24 miles to Sandusky, and also the construction of a branch from near Frankfort, Ind., southward about 40 miles to Indianapolis. A company was organized some months ago to build this Indianapolis branch.

Lehigh Valley.—The Court of Chancery having, by its recent decision, settled the title of the land under water at Communipaw granted to the New Jersey West Line Company and afterward bought by this company, the company has paid the State Treasurer of New Jersey the full amount of the mortgage on the property held by the School Fund Trustees, with all arrears of interest. The total amount was about \$130,000.

Lexington & Southern.—This company has filed articles in Missouri for an extension of its proposed road southward to the Arkansas line, a total distance of 200 miles from the starting point at Pleasant Hill.

Little Rock & Fort Smith.—In the case of Shaw and Greenough against this company, appeal from the Circuit Court for the Eastern District of Arkansas, the United States Supreme Court has given a decision, of which the following is a summary:

In November and December, 1874, decrees of foreclosure and sale were entered in the United States Circuit Court for the Eastern District of Arkansas in two suits brought to foreclose mortgages upon the property of the Little Rock & Fort Smith Railway Company. These mortgages were given to secure bonds amounting in the aggregate to \$8,500,000. Upon these bonds default had been made, and suits were instituted by the trustees of the mortgage deeds for the benefit of all the bondholders. The present appellants, who are holders of said bonds to the amount of about \$70,000, now seek to have the decrees of foreclosure and sale reversed and set aside, and to have all of the bondholders placed in the same situation that they would have been had the decree not been rendered. This court holds that appellants are not entitled to the relief prayed for; that a small minority of the bondholders, representing a comparatively insignificant part of the mortgage debt, cannot be allowed, in the absence of any pretense of fraud or unfairness, to defeat the wishes of an overwhelming majority of those associated with them in the benefits of their common security. The decrees of the court below are affirmed with costs.

Little Rock, Mississippi River & Texas.—A branch called the Rob Roy Branch has been completed and opened for business from Pine Bluff, Ark., east by north to Micawber. The branch is on the south side of the Arkansas River, and Micawber is apparently on the river and opposite the town of Rob Roy, which is on the north side.

The terminal station on the Mississippi, heretofore called Arkopolis, is now known as Arkansas City. The change is made to conform the station name to that of the post-office and river landing.

Louisville & Nashville.—All sorts of contradictory rumors have been afloat as to this company's intentions with respect to the Georgia Western road. The latest dispatches from Atlanta announce that the road is to be begun at once—but they will probably be contradicted before the end of the week. The road seems to be kept in reserve with the expectation that the threat of a new line to Atlanta will keep Mr. Wadley and the Western & Atlantic people in order. There has also been a report this week that the Louisville & Nashville had leased the Central of Georgia, of which no confirmation has been had.

A dispatch from Atlanta, Ga., April 7, says: "The railroad conference that has been in session in this city for the past week has closed at last, and with decisive results. The Western & Atlantic road, which has been so long a bar to the proposed line to the sea, has been merged in a combination headed by President Newcomb, of the Louisville & Nashville road, of which Presidents Wadley, Alexander and Brown are members. This alliance gives the Louisville & Nashville road a clear way to the coast, and will result in the immediate operation of the long-talked-of through line that will compete with the trunk lines for the carrying trade between the West and South and New York. A joint office will be opened at once in New York, and through schedules and rates will be established. The permanency of the contract is assured, it is said, by the most liberal guarantees to the Louisville & Nashville Road, and it may be assumed that the railroad troubles in the South are practically over and the leading lines united in one harmonious system. There is general satisfaction over the result."

Maine Central.—It is ordered that, after April 1, the rear signals to be carried on the rear car of all passenger trains and the caboose of all freight and service trains shall be two green flags, instead of red ones, as formerly. The rear signals at night will be two lamps, one on each side of the rear platform, showing white from the front and red from the rear.

Missouri, Iowa & Nebraska.—In pursuance of the agreement under which a controlling interest in this road was recently sold to the Wabash, St. Louis & Pacific, arrangements have been made to foreclose the mortgages on this road, and proceedings will soon be begun. There are \$2,450,000 recognized bonds, besides a further issue of \$600,000, which, the company claims, was illegally made.

Missouri Pacific.—The stockholders of the old company have not quite abandoned their case under the recent decision of the Supreme Court. In Washington, April 5, leave was asked—and granted—to file a petition for authority from the Court to the old company to pay its mortgage debt and take back the road. The hearing on the petition was set for next week.

It is understood that the city of St. Louis will refuse all the offers made to sell or compromise its claim against this company, an opinion having been obtained from Senator Edmunds as counsel that the claim is too clear and strong to admit of any doubt of the city's final success in enforcing it.

Nashville, Chattanooga & St. Louis.—At the special meeting held in Nashville, March 30, the stockholders voted to approve the sale of the Owensboro & Nashville and the lease of the St. Louis & Southeastern to the Louisville & Nashville; also the settlement with subscribers for the proposed issue of bonds to complete the Owensboro & Nashville road.

New Jersey & New York.—The bondholders have organized a new company. The road was sold last November under foreclosure, the section of 17½ miles in New Jersey having been previously sold and bought in by bondholders under prior first mortgages. The reorganization, we believe, is to include the whole road, which extends from Hackensack Junction, N. J., to Grassy Point, N. Y., with a branch from Nanuet Junction, N. Y., to New City, 36½ miles of road in all.

New London Northern.—This company is now offering \$750,000 new 30-year 5 per cent. bonds, issued under the new consolidated mortgage. Of those now offered, \$650,000 are to pay for the Brattleboro Branch bought from the Vermont & Massachusetts, and the rest for the new wharf at New London.

New Orleans & Selma.—The Alabama Court of Chancery has decided to dismiss the Robertson suit, and to grant a decree of foreclosure and sale. The decree orders the division of the proceeds of sale among all holders of endorsed bonds. The road is in operation from Selma, Ala., to Martin, 21 miles.

New York & Oswego Midland.—The representatives of the town stock in this company have resolved to transfer the stock in trust to the New York parties who have agreed to redeem the road from the new company organized by the purchasers at the foreclosure sale.

New York, Lake Erie & Western.—The following statement is for the five months of its fiscal year from Oct. 1 to Feb. 29:

	1879-80.	1878-79.	Increase.	P. c.
Earnings.....	\$7,176,376	\$6,415,243	\$761,133	11.9
Expenses.....	4,800,288	4,513,492	286,796	7.7
Net earnings.....	\$2,316,088	\$1,901,751	\$414,337	21.8

It has been decided to move the general offices from the old building in West street, New York, which is considered unsafe, and they will probably be taken back to the Grand Opera House building in Twenty-third street.

New York, New Haven & Hartford.—The reduction of 10 per cent. in local fares over this road was made April 1. The company adheres strictly to the 10 per cent., making some difficulty in change, as from many stations the fares are odd sums, making it necessary for the agent to lay in a stock of one-cent pieces for change.

Northern (New Hampshire).—From April 1 all local fares over this road are fixed at 3½ cents per mile, a reduction of from one-quarter to one-half cent per mile. A reduction is also made in rates from local points to Boston and other towns on the lower roads.

Northern Pacific.—Mr. J. F. Dodge, the Engineer, recently made a reconnaissance, under escort, of the Yellowstone Valley above Miles City, Montana, which is described at great length by a correspondent of the New York Times. He found a bench or bottom on one side or the other of the stream almost continuously, and very favorable for construction; but on the opposite side the stream runs alongside a precipitous bluff, and at the elevation at certain divides cut by the river is so great that deep cuts or tunnels will be required unless the road is carried by a bridge to the opposite bank. Except in the eastern part of the valley survey, there are now numerous ranches along the stream. The Times correspondent says:

"The results of the recent trip may be summed up briefly. The Yellowstone Valley was found to be far better adapted to the construction of a railroad at a minimum of expense than had been expected. A continuous down grade can be secured from its western extremity to the point where the track finally leaves the river going eastward, which, as the current of freight traffic must eventually be mostly from the western portions of the road, will tend to reduce running expenses almost in the degree that the level roadway which nature has provided will reduce the cost of construction. It is understood to be the earnest desire of the directors in New York that the road shall be kept on the south side of the Yellowstone, at least until reaching the head of navigation, after which the extra expenses of draw-bridges will be obviated. For all practical purposes the mouth of the Big Horn is the limit of up-stream navigation, and, excepting during about two months each year, it is next to impossible to get a steamboat even that high. It is still a matter of doubt whether the road can be made on the south shore as far as the Big Horn, but Mr. Dodge will satisfy his mind upon that point without delay. Should it turn out to be so, the probable course of the track in the Yellowstone Valley will be on the south shore, from near the mouth of Cabin Creek, through Miles City, to Baker's Battleground, about 250 miles, thence on the north shore to Countryman's, and thence veering, for the last time, the south shore will be followed to Benson's Landing, making about 375 miles of road along the river. A few weeks will decide these important questions, and by the time that spring has fairly set in the valley will probably be alive with surveying operations."

The route has not yet been determined between the Little Missouri and the Yellowstone, nor the point where the latter stream will be reached, but locating surveys will be made very soon—are probably already in progress. Mr. Dodge was to begin a locating survey west of Miles City early in April. His chief assistant on the reconnaissance was Mr. Irving Van Vleet.

It is understood that the track will be laid to the Yellowstone by the end of August next.

Ohio & Mississippi.—The United States Circuit Court has directed the Receiver to pay two of the coupons accrued upon the second mortgage bonds. This will be the first payment on those bonds since the Receiver was appointed.

Old Orchard Beach.—This company has been organized to build a railroad from Old Orchard Beach Station on the Boston & Maine road southwest along the beach to the mouth of the Saco River. It will be about five miles long. It is to be a narrow-gauge road, and will probably be worked only in the summer.

Ontonagon & Montreal River.—The Duluth News says: "For many years the dream of Duluth has been a railroad along the south shore of Lake Superior giving connection, by way of the Straits of Mackinaw and the Michigan lines, with Detroit, and by way of the Sault and the proposed Canadian roads, with Montreal, Portland and Boston. We are glad to be able to state that arrangements are so far advanced that the completion of the South Shore Railroad at an early day now seems to be a fixed fact. A sketch of the movement up to the present time will not be out of place. When last June the St. Paul & Duluth Railroad was found to have passed into the hands of the Chicago, St. Paul & Minneapolis road, a call was issued from St. Paul for a conference on July 7, at that city, of representatives from different sections of the state to consult with reference to new outlets to the East. Colonel J. B. Culver, speaking for Duluth and the northern section of the state, at this conference, suggested the plan of a South Shore railroad as the most effectual means of holding in check the Chicago lines, and his views seemed to meet with general favor. A call was issued

for a general convention to meet at St. Paul on July 22, to further consider the question. The convention met, their ardor somewhat dampened by President Hilsley's letter to the *Pioneer Press*, which appeared that same morning, were unable to agree as to the best methods to shake off the Chicago anaconda, developed strong opposition in some quarters to a road from Duluth to the Sault, directed the Hon. H. M. Rice, the chairman, to appoint a committee of fifteen, and adjourned. Colonel Culver, who, in the middle of July, visited South Shore ports to urge representation at the coming convention, and was one of the committee of fifteen, now commenced active work. He soon found that the managers of the reorganized Detroit, Mackinaw & Marquette Railroad were alive to the importance of a connection at Duluth with the Northern Pacific, and would put in a link from their main line to the Sault. About this time the management of the Marquette, Houghton & Ontonagon Railroad, of which line 65 miles is now completed from Marquette to L'Anse, changed hands, Boston parties gaining control. Col. Culver visited these parties personally in Boston and secured their agreement to build from Summit on their present line to the Ontonagon River, the terminus of their land grant, a distance of some 50 miles. Two gaps only now remain to be closed, from Duluth to the Montreal River, 90 miles, and from Montreal River to Ontonagon River, where the projected road would meet the Marquette, Houghton & Ontonagon. There was no difficulty in regard to the first section, for the Northern Pacific land grant carried them to the Montreal River, the boundary line between Michigan and Wisconsin; leading men of these states have for some time been insisting that this line should be built, and the Northern Pacific willingly agreed to build it. To put in the remaining link of 50 miles an organization has recently been incorporated under the title of the Ontonagon & Montreal River Railroad Company, and the incorporators are as follows: Samuel Schoch, General Manager of the Marquette, Houghton & Ontonagon Railroad; Colonel J. B. Culver, Dr. V. Smith, C. Markell, Wm. R. Stone, A. S. Chase and James Bardon. We will merely remark that the means by which this new company will build will be forthcoming as soon as required. The survey of the route from a point twelve miles south of Ashland eastward to the Ontonagon River is already under way; the Northern Pacific surveyors are expected to commence their work within two weeks, and the whole line will be fully surveyed by May 1. It is not improbable that Aug. 1 will see the work of construction actually commenced. As is well known the Detroit, Mackinaw & Marquette road is now under construction; 20 miles were let last fall, and President McMillan has recently telegraphed Colonel Culver that 50 miles additional are now let. They have already on hand the money needed to complete the whole line. The length of the various sections is as follows: Duluth to Montreal River, 90 miles; Montreal River to Ontonagon River, 50 miles; Ontonagon River to Marquette, of which 50 miles are now laid, 100 miles; Marquette to the Sault or Mackinaw, of which 70 miles are now under contract, 150 miles; total length, 390 miles. To Colonel J. B. Culver, more, we believe, than to any other man, is due the credit of this new railroad movement, a road which cannot fail to have great influence in shaping the future of Duluth, and our people will not forget it."

Pennsylvania.—The new line for the West Chester Branch has been completed, joining the main line at Frazier instead of Malvern. The old line to Malvern, so far as it differs from the new road, has been abandoned and will be taken up.

The employees of the United New Jersey Division are now being examined as to the strength and quality of their eyesight. The examination is not for color-blindness alone, but for steadiness and correctness of vision in all respects. It is understood that it will be extended to all the company's lines.

The 10 per cent. increase in wages is to extend to all the Pennsylvania Company's leased and controlled lines west of Pittsburgh, and also to the Northern Central and other controlled lines. It took effect April 1 on all the company's lines.

Philadelphia, Wilmington & Baltimore.—A spur about three miles long is to be built from Crum Creek, near Chester, Pa., to Avondale, to reach a large quarry there. An effort is being made to have this extended three miles further, to Media, and used for passenger business also.

Pioche & Salt Lake.—A company has been organized to build a railroad from the town of Pioche, in Southeastern Nevada, northeast to Frisco, Utah, to connect with the Utah Southern Extension. The distance is about 90 miles. Pioche is the centre of a large mining district.

Pittsburgh, Cincinnati & St. Louis.—It is officially announced that wages and salaries of all employees on this company's road and its leased and controlled lines will be restored to the rates in force on June 1, 1877, thus restoring the 10 per cent. reduction made at that time.

Portage & Baraboo.—It is proposed to build a railroad from Portage, Wis., west by south to Baraboo on the Madison Division of the Chicago & Northwestern. The distance is about 18 miles, following Baraboo River most of the way, and passing some large quarries.

Portland & Vancouver.—This company has been organized to make a connection between Portland, Or., and Vancouver, by a railroad about 15 miles long and a steam ferry across the Columbia River.

Quincy, Missouri & Pacific.—The track of this road is now laid to Greencastle, Mo., 12 miles west of the late terminus at Novinger, and 90 miles from West Quincy.

St. Paul & Sioux City.—The following circular has been issued by this company:

"Commencing April 1, 1880, this company will accept three-quarters of one cent per mile run as mileage for its freight cars, loaded or empty, and will allow the same to other railroad companies and lines, whose cars are used by this company. All roads using cars of this company are requested to send mileage reports to F. M. Luce, Car Accountant, Chicago, Ill."

A contract for building the Ft. Dodge Branch from Blue Earth City, Minn., to Ft. Dodge, Ia., has been let to H. W. Holley, of La Crosse, Wis., work to be begun at once.

St. Louis, Iron Mountain & Southern.—Surveys are being made for a branch line from Allenville, Mo., northeast to Jacksonville in Cape Girardeau County, about 16 miles.

Surveys are also being made for a branch line south by west to Camden, in southern Arkansas, about 34 miles, through a good cotton country. Part of this proposed line was, we believe, graded by the Onachita Valley Company several years ago.

Scioto Valley.—This company has offered to extend its road from Portsmouth, O., southeast up the Ohio River through Ironton to a point opposite Ashland, Ky., provided the people of Ironton will raise \$75,000. The City Council

of Ironton has applied to the Ohio Legislature for authority to issue bonds for the amount asked.

Selma, Rome & Dalton.—At a meeting of holders of securities of this company in New York, April 7, it was decided to organize for the purchase of all classes of the securities of the road. The Farmers' Loan and Trust Company was appointed transfer agent for the stock. The meeting agreed that an appeal ought to be taken from the recent, it was claimed, unjust decision of the State Court of Alabama to the United States Supreme Court.

Sioux City & Dakota.—Messrs. John I. Blair, D. C. Blair, and W. C. Larned, who hold a majority of the stock, have protested against the lease of this road to the Chicago, Milwaukee & St. Paul on the ground that the lease is fraudulent and void, and that an issue of stock and bonds ordered at the same time, ostensibly to pay for the extension from Beloit to Sioux Falls, is also fraudulent and void. They also demand that the lessee at once deliver up the road and return it to the company, and that the lease be vacated, and the stock issued as above, and sold to the Chicago, Milwaukee & St. Paul, be surrendered.

Stillwater & Hastings.—This company has been organized to build a railroad from Stillwater, Minn., southward down the St. Croix to Hastings, about 25 miles. The capital stock is fixed at \$1,000,000.

Stony Creek.—This railroad, formerly worked by the North Pennsylvania Company under contract, is not now operated by the Reading Company, not having been included in the lease to that company, but is managed by its own officers, and worked for account of the company. It extends from Lansdale on the North Penn road south by west to Norristown, 10 miles.

Toledo, Delphos & Dayton.—This company purposes building a narrow-gauge road from Delphos, O., where it connects with the Toledo, Delphos & Burlington, to Dayton, about 95 miles southward. The line, apparently, is to include the Dayton, Covington & Toledo, now completed to Versailles, 41 miles from Dayton.

Utah Southern Extension.—Track on this road is now laid to Black Rock Springs, Utah, 30 miles southwest from the late terminus at Desert, 83 miles from Juab, where this road begins, and 188 miles from Salt Lake. Less than 40 miles remain to finish the road to Frisco, which is to be the terminus for a time.

Warwick Valley.—The connection between the old line and the extension in Warwick, N. Y., was finally made March 27, the last rail being laid March 27, with due ceremony. The occasion was celebrated by a banquet at which many officers and friends of the road were present.

Washington & Hope.—This road was built some time ago as a wooden tramway from Washington, Ark., south by east to Hope, on the St. Louis, Iron Mountain & Southern road, about 10 miles. Arrangements are now being made to lay iron rails on the road and use a locomotive instead of mule power.

Washington City, Virginia Midland & Great Southern.—Holders of the bonds and other obligations of this company who intend to participate in the scheme of reorganization are requested to deposit their bonds with the Safe Deposit Company of Baltimore and receive transferable certificates for the same. The Baltimore Stock Board has approved these certificates and determined them, when duly executed, to be good deliveries.

West Jersey & Atlantic.—Work is now progressing well on this road. Track is laid from the junction with the West Jersey road at Newfield, N. J., eastward 17 miles to May's Landing. A large force is at work driving piles on the meadows back of Atlantic City. It is expected that trains will run through about June 1.

Wilmington & Northern.—The French Creek Branch is now completed and will soon be opened for business. It is about six miles long, leaving the main line near Springfield, Pa., and running eastward to the Falls of French Creek, a favorite resort for picnic and excursion parties. The branch has been built chiefly to reach some large deposits of iron ore and building stone.

A new track is to be built near White Bear, Pa., to replace a section of the present line, on which there are several bad curves and a long trestle, which the new line will avoid.

ANNUAL REPORTS.

The following is an index to the reports of companies which have been reviewed in previous numbers of this volume of the Railroad Gazette:

Page.	Page.
Allegheny Valley..... 152	Lehigh Valley..... 137
Baltimore & Potomac..... 152	Long Island..... 70
Boston & Albany..... 54	Mass. R. R. Commission..... 45
Boston & Lowell..... 74	Minneapolis & St. Louis..... 152
Bur. & Mo. River in Nebraska..... 50	Mobile & Montgomery..... 152
Canada Southern..... 74	Montpelier & Wells River..... 124
Central of Georgia..... 25	N. Y. Lake Erie & West..... 61
Central of New Jersey..... 151	N. Y. N. H. & Hartford..... 25
Charlotte, Col. & Augusta..... 151	N. Y. Providence & Boston..... 25
Chesapeake & Ohio..... 90	N. Y. Oswego Midland..... 11
Chicago & Pacific..... 130	Norfolk Southern..... 125
Chi., Burlington & Quincy..... 150	Ohio & Mississippi..... 25
Chi., Cl. nt. Dub. & Minn..... 174	Pennsylvania Railroad..... 150, 157
Chicago, Ill. & St. Paul..... 70	Pennsylvania & New York..... 152
Chi. & West Michigan..... 125	Philadelphia & Reading..... 34
Cincinnati Southern..... 124	Phila. W. L. & Baltimore..... 11
Cleve., Col. Cin. & Ind..... 151	Pittsburgh & Lake Erie..... 40
Cleve., St. Val. & Wheeling..... 152	Quincy, Mo. & Pacific..... 152
Consolidation Coal Co..... 124	Raleigh & Gaston..... 25
Cumberland Valley..... 152	Richmond & Danville..... 152
Dayton & Southeastern..... 70	Richmond & Petersburg..... 127
Delaware..... 50	Rome, W. town, & Ogdensburg..... 11
Delaware & Hudson Canal..... 90	St. Louis, Iron Mt. & Southern..... 177
Del. & Hud. Can. Leased Lines..... 124	St. Louis, Van. & Terre Haute..... 90
Del., Lack. & Western..... 70	South Carolina Railroads..... 40
Delaware Western..... 70	Troy & Boston..... 70
Fitchburg..... 74	Union Pacific..... 151
Flint & P. R. Marquette..... 75	Wabash, St. L. & Pacific..... 75
Galv., Houston & Henderson..... 152	West Chester & Phila..... 75
Hannibal & St. Joseph..... 152	Western North Carolina..... 154
Huntington & Broad Top..... 90	Western R. R. Association..... 46
Illinois Central..... 118, 123	Wilmington, Col. & Augusta..... 108
Intercolonial..... 152	Wilmington & Weldon..... 108
Lehigh Coal & Nav. Co..... 107	Wisconsin Valley..... 177

Maine Central.

This company worked the following lines for the year ending Dec. 31, 1879:

	Miles.
Portland, Me., by Augusta to Bangor.....	130.5
Cumberland Junction, by Lewiston to Waterville.....	73.0
Brunswick to Lewiston.....	23.0
Brunswick to Bath.....	9.0
Crowley, by Leeds Junction to Farmington.....	9.0
Waterville to Skowhegan.....	10.0
Total owned.....	307.5
Belfast & Moosehead Lake, leased.....	33.5
Newport & Dexter, leased.....	14.0
Total worked.....	47.5
Total owned & worked.....	355.0

The equipment consists of 58 engines; 58 passenger, 3

postal and 22 mail and baggage cars; 645 box and stock and 474 flat cars; 29 service cars, 21 snow-plows and 11 flange-scrappers. Two engines were bought from the Portland Company; 1 passenger, 1 baggage and 13 freight cars and 4 snow-plows were built in the company's shops during the year.

The balance sheet, condensed, is as follows:

Stock (\$11,718 per mile).....	\$2,903,300.00
Stock bonds.....	10,800.00
Bonded debt (\$28,300 per mile).....	8,704,218.96
Interest scrip.....	11,562.00
Portland & Kennebec stock not converted.....	800.00
Accounts and balances, interest accrued, etc.....	21,730.69
Profit and loss, balance.....	328,309.29
Total.....	\$12,686,850.94

Road and equipment (\$37,973 per mile)..... \$11,676,692.78
 Androscoggin lease..... 768,333.33
 Stock and bonds..... 20,185.03
 Fuel and materials..... 108,546.73
 Cash and receivables..... 115,083.07
 Total..... \$12,686,850.94

Cost of road was reduced \$1,780 by real estate sold. Stock remains unchanged. The company has no floating debt, having successfully funded that which it carried some years ago. The bonded debt was reduced \$4,723.08 during the year by payment of old bonds.

There are nine classes of bonds outstanding, as follows: \$1,100,000 Androscoggin & Kennebec loan; \$496,500 Maine Central Extension bonds; \$756,800 Maine Central 7 per cent. bonds; \$217,300 Portland & Kennebec first-mortgage; \$5,218.96 Portland & Kennebec funded interest; \$1,166,700 Portland & Kennebec consolidated; \$425,000 Bath city loan to Androscoggin road; \$633,000 Leeds & Farmington bonds, and \$3,908,700 Maine Central consolidated bonds. The intention is to fund all these in the Maine Central consolidated loan. The annual interest charge is \$568,840.52, or \$1,850 per mile owned; rental charges are \$54,000, or \$1,137 per mile leased.

The traffic for the year was as follows:

	1879.	1878.	Inc. or Dec.	P. c.
Passenger mileage.....	523,809	498,343	I.	28.556
Freight.....	390,454	355,688	I.	34.780
Service and switching.....	277,125	234,847	I.	42.378
Total.....	1,191,478	1,088,878	I.	107.620
Passengers carried.....	553,364	505,006	D.	11.642
Passenger mileage.....	20,441,291	20,449,197	D.	7.900
Tons freight carried.....	396,107	329,811	I.	66.293
Tonnage mileage.....	27,652,047	21,196,581	I.	6,455,460
Av. train load.....	38.80	41.04	D.	2.24
Freight, tons.....	70.81	59.50	I.	11.22
Av. receipt.....	2.98 cts.	3.05 cts.	D.	0.07 ct.
Per ton per mile.....	2.87	3.32	D.	0.45

There is very little through business, nearly all the business originating on the line, and on much of it there is no competition. The average travel of passengers was 36.94 miles; average haul of freight, 69.81 miles. The average receipts per train-mile were 164.4 cents; expenses, 94.8 cents; net earnings, 69.6 cents. The increase in freight-train load is very marked.

The earnings for the year were as follows:

	1879.	1878.	Inc. or Dec.	P. c.
Passage.....	\$610,424.70	\$623,718.24	D.	\$13,293.55
Freight.....	703,660.38	702,068.09	I.	91,631.29
Express, mail, etc.....	104,252.85	108,301.40	D.	4,048.55
Miscellaneous.....	10,159.60	5,973.73	I.	4,185.87
Total.....	\$1,518,536.62	\$1,440,661.46	I.	\$77,875.16
Expenses.....	809,979.39	840,704.72	I.	\$30,725.33
Net earn.....	\$648,557.23	\$599,956.74	I.	\$48,600.49
Gross earn.....	4,977.57	4,058.20	I.	219.37
Net earn. per mile.....	1,826.92	1,960.02	I.	136.90
Per cent. of exps.....	57.29	58.35	D.	1.06

The increase in freight earnings was considerably less than that in traffic. Expenses were increased by the repairs made necessary by the heavy freshet of December, 1878, and by alterations and improvements of culverts and other waterways. Much labor was expended on bridges and bridge masonry.

The income and profit and loss accounts were as follows:

Net earnings.....	\$648,557.23
Interest on bonded debt.....	\$560,170.44
" temporary loans.....	3,725.79
Rent of Dexter & Newport R. R.....	18,000.00
" Belfast and Moosehead Lake R. R.....	36,000.00
Total.....	\$26,005.23
Surplus for year.....	\$21,052.00
Old bond not presented.....	200.00
Discount on scrip taken up.....	1,752.00
Balance, Dec. 31, 1879.....	360,004.81
Total.....	\$392,608.81
State taxes of 1874, '75, '76 and '77.....	\$49,284.34
Old accounts charged off.....	7,331.88
Kennebec & Portland bond.....	508.17
Changing gauge, New Brunswick & Canada.....	6,635.13
Balance at credit, Dec. 31, 1879.....	\$328,309.29

In spite of the gain in earnings, there was only the sum of \$21,052 remaining after paying interest and rental charges, or not much over 0.6 per cent. on the stock.

The Railroad Commissioners report the road in good order, and well managed.

The report says: "Our trains have been run with regularity, and without serious accident, and no passenger has received any injury. Extensive repairs and improvements have been made at several of our stations, and they are now in such generally good condition that we do not anticipate any occasion for large expenditures in that department for the coming year."

"The heavy freshets of the fall of 1878 did little immediate damage to our road-bed, yet they developed weak points and made necessary a larger expenditure than ordinary in enlargement of culverts and drains. For that reason, our expenditures in that department have been unusually large."

"Iron bridges have been erected on the Androscoggin, between Brunswick and Topham, and over Portland street in Portland."

"The heavy stone work for the abutments and piers of these bridges was principally completed during 1879, and is included in the operating expenses of the year. The iron work has only been received since the beginning of the new year, and will be paid for out of the earnings of 1880."

"A larger number of ties than usual has been placed in the track, and we have laid 2,113 tons of steel, against 618 tons in 1878. The old iron rails taken up were sold, so that the substitution of steel for iron cost for the year 1879, \$15.72 per ton."

"We have now 53 miles of steel rail laid, and have purchased 2,000 tons more, to be laid during 1880. As this purchase was made prior to the recent large advances in

prices, our expenditures in this department in 1880 ought not to be much in excess of those for 1879. The iron bridge just erected over Portland street is intended for a double track, and we hope that during the coming year we may be able to construct a double track to Morrill's Corner, and thus in the future avoid vexatious delays now incident to crossing so many trains on turnouts at the approach to our Portland terminus."

"The Sandy River Railroad, of 2 feet gauge, has been completed from Farmington to Phillips (18 miles), and was opened in December, 1879."

"We trust that this may prove to be a valuable feeder to the Maine Central, and we have accordingly extended to its promoters every facility in our power to enable them to complete their line and put it in successful operation. There are several other lines projected, of more or less importance to this road, but none of them have yet reached a point where their building is secured."

"Meanwhile we have adhered to the policy adopted by this board, to do nothing which shall render the Maine Central liable for any projected road, while at the same time it gives to those likely to become feeders to our line, all the aid in its power, other than pecuniary."

"In the year 1879, we hardly make up the deficiency arising from the business of 1878, and we had besides to pay the large sum of \$49,284.34 to the state, for taxes of previous years. Unjust and oppressive as these taxes were, they have now been entirely settled, but our profit and loss account bears witness to the fact that this corporation cannot exist and continue to pay exactions of this character, and we respectfully submit the question whether the people of Maine can afford to break down or impair the value of the securities of this company, held so largely throughout the state by citizens and savings banks, for the sake of any temporary advantage arising from the collection of a tax by the State Treasurer. The savings banks of Maine own \$1,039,500 of Maine Central securities, and hold in addition \$297,500 as collateral, as appears by the report of the Bank Commissioner just published, and we estimate that at least \$6,000,000 of our bonds are owned by citizens of this state."

Panama.

This company owns a line across the Isthmus of Panama from Aspinwall to Panama, 47.5 miles. The company also owns steamers which run between its terminal ports and points in Central and South America. The following statements for the year ending Dec. 31 were presented at the recent annual meeting.

The bonded debt is as follows:

Sterling 7 per cent. bonds due 1897.....	\$2,989,000
Sterling 7 per cent. bonds issued in 1878.....	1,000,000
Total.....	\$3,989,000

Securities, etc., in sinking fund..... 770,822

Other assets and liabilities are as follows:

Accrued interest and sinking funds.....	\$99,096
Drafts and bills.....	10,728
Total.....	\$109,794
Cash.....	\$27,791
Call loans and accrued interest.....	757,878
Panama stock, cost.....	122,564
Accounts and balances receivable.....	603,355
Total.....	1,511,528

Surplus of assets..... \$1,401,734

An increase of \$210,958 in surplus during the year. Besides this the company holds property transferred to it Feb. 1, 1878, by the Pacific Mail Steamship Company, for which \$1,000,000 of the sterling bonds were issued.

The earnings and expenses for the year were as follows:

	1879.	1878.	Inc. or Dec.	P. c.
Passengers.....	\$142,709	154,052	D.	8.0
Freight.....	1,504,052	1,504,052	I.	0.0
Other sources.....	449,606	449,606	I.	0.0
Total.....	\$2,116,367	\$2,114,859	I.	\$1,508
Working expenses.....	504,617	545,344	D.	40,727
Net earnings.....	\$1,651,750	\$1,569,515	I.	\$82,235
Gross earn. per mile.....	45.307	44.323	I.	874
Net ".....	34.774	33.042	I.	1,732
Per cent. of exps.....	23.41	25.79	D.	138

The receipts were reduced by the temporary reduction of the Pacific Mail Company's payment from \$120,000 to \$60,000 per month, in order to adjust and settle some old claims. This was more than made up by the great increase in the business from South and Central America, and the partial withdrawal of the line from Callao to England by the Straits of Magellan, and the transfer of some of the business carried by sailing vessels. The traffic was as follows:

	1879.	1878.	Inc. or Dec.	P. c.
Passengers carried.....	23,729	24,921	D.	1,192
Tons freight carried.....	161,743	152,477	I.	9,264

Through freight between New York and San Francisco was 30,734 tons, or only 19 per cent. of the total tonnage. Passenger travel decreased owing to light travel between New York and California and to the South American war.

The income account was as follows:

Net earnings, as above.....	\$1,651,750
Subsidy to United States of Colombia.....	\$250,000
Drawbacks on Colombian produce.....	9,939
Interest on bonds.....	270,853
Dividends, 13 per cent.....	910,000
Total.....	1,440,702

Balance to surplus..... \$210,958

Four quarterly dividends were paid, three of 3 per cent. each, and one of 4 per cent. The net earnings, after paying interest and subsidy, were 16 per cent. on the capital stock of \$7,000,000.

During the year 18 miles of track were laid with new steel rails, leaving only 12 miles of track laid with iron, which is to be replaced with steel this year. The Superintendent says that a new wharf at Aspinwall should be built, and 50 more flat cars are needed.

Both the Pacific Mail and the English and French lines are now giving more frequent service by this route.

Cincinnati, LaFayette & Chicago.

This company owns a line from Templeton, Ind., to Kankakee, Ill., 56 miles, and it leases the use of the Lake Erie & Western track from Templeton to La Fayette, 19 miles, making 75 miles in all. The following statement of earnings is for the year ending Dec. 31 last:

	1879.	1878.	Inc. or Dec.	P. c.
Passage.....	\$101,187	\$96,963	I.	\$4,224
Freight.....	253,396	287,172	D.	33,786
Express, mail, etc.....	34,323	35,356	D.	1,033
Total.....	\$388,806	\$419,491	D.	\$30,685
Expenses.....	288,634	278,578	I.	10,056
Net earnings.....	\$100,262	\$140,913	D.	\$40,651
Gross earn. per mile.....	5.185	5.593	D.	408
Net ".....	1.337	1.879	D.	542
Per cent. of exps.....	74.21	66.40	I.	7.81

The road is part of a very direct line between Cincinnati and Chicago. It is now controlled in the interest of the Cincinnati, Indianapolis, St. Louis & Chicago Company